IRON TRADE REVIEW
Registered U. S. Patent Office
The Authority of Industry National and International

Vol. LXXV Cleveland, November 13, 1924 No. 20

Election Restores Market Faith

Covering of Future Requirements Is Stimulated—Heavy Buying Movement in Pig Iron Develops, Bringing Price Advances—Steel Market, Under Keen Competition, Moves More Conservatively—Continued Improvement Expected

ELECTION results have cleared the air of much uncertainty and indecision and have brought high confidence to the iron and steel market which has resulted in an appreciable stimulation of new buying the past week. This immediate buying has been more pronounced in basic materials, particularly pig iron which has been lagging, than in finished lines. However, the latter also are reflecting the enhanced faith in future conditions and the shaping up of larger programs to meet these. Consumers of iron and steel seem no longer to feel cause for hesitation in committing themselves on forward requirements, at least for the first quarter and this attitude plainly has marked the tonnage placed this week.

Despite the much stronger undertone, capacities remain only partially booked and producers show no disposition to attempt to force the situation. The mills are talking higher prices but are quoting conservatively. One independent maker in southern Ohio this week has advanced sheet prices $2 and $3 per ton and other mills may follow this example soon. There is a stiffening apparent in some other lines but competition remains keen, which tends to keep the situation in check.

Higher pig iron prices all around have given IRON TRADE REVIEW composite of 14 leading iron and steel prices its first substantial increase since January. This week the index is $38.79 compared with $38.56 last week and $43.26 in January.

Iron Sales Heavy

Pig iron has led all markets in the expansion of buying. The movement begun shortly before the election has been extended rapidly this week until virtually all the leading consumers of the country have closed or are closing upon their requirements to April. Radiator and sanitary ware manufacturers have bought heavily. In some sections the movement is described as the largest since 1920. Estimates place the sales in the past two weeks at not less than 600,000 to 700,000 tons. Of this 350,000 to 400,000 tons was closed in the Cleveland-Buffalo-Detroit district, 150,000 to 175,000 tons at Chicago, 60,000 tons at New York and liberal totals at all market points. Under the influence of this buying swell, prices generally have been advanced 50 cents per ton. Valley basic has been lifted to $19.

Big Orders In View

Demand for structural shapes and building steel is an outstanding feature this week. In the East fully 100,000 tons of plain material is under negotiation. At Chicago, one mill put 40,000 tons on its books in the week. Chicago has one 15,000-ton and one 10,000-ton contract in the closing stage. The week's record of structural steel awards is 29,359 tons.

The railroads still are the steel industry's best customer. Of about 60,000 tons of rails placed this week, 30,000 tons is for the Chesapeake & Ohio, 15,750 tons for the Northern Pacific, 7500 tons for the International & Great Northern and 5000 tons for the Hocking Valley. The Norfolk & Western has closed for 3000 cars and the Baltimore & Ohio bought 16,000 tons of steel for car repairs.

Recent export inquiries for 500,000 boxes of tin plate principally for Standard Oil companies have not been closed, contrary to published reports.

Some heavier buying by consumers and prospects for increased future demands have invited the usual buoyant behavior of the scrap market under such conditions, in which speculation has figured largely. Heavy melting steel has advanced 50 cents to $1.50 a ton and other grades in lesser degree.

Revived interest by pig iron producers in their future requirements of coke is giving a new tone to the market. While spot prices are no higher, $3.25 ovens now is minimum for first quarter and some makers are asking $3.35.

Steel Output Gaining

Steelworks operations in October averaged 71.5 per cent of the historic high record in March, according to steel ingot statistics. They also are shown to have risen 60.3 per cent above the low point in July. The gain of October over September was 6.4 per cent. For the first time in six months total ingot output in October exceeded 3,000,000 tons monthly or at the rate of 35,840,000 tons annually. The annual rate in September was 33,670,000 tons.

Business Trend and Chart Section Page 1293

The Reader's Page

Contents, Nov. 13, 1924

ENGINEERING ARTICLES

Fire Clay Is Farm's Best Crop.....1297
Use of Scrap Conserves Raw Materials.....1299
Drop In, Between Revolutions.....1302
Fluorine Influences Refractories.....1305
Germany's Position in Machinery Trade—By W. H. Rastall.....1308
Cast Pipe Practice Is Changing—By Richard Moldenke.....1309
Large Uses of Steel In Small Ways—Dental Drills.....1311

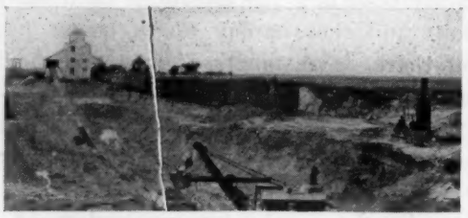
MARKET AND GENERAL NEWS

General Market Review.....1269
Domestic Market Reports.....1271-1283
Price Tables.....1272, 1273, 1324, 1328, 1332
British Trade Revival Starts.....1286
Editorials.....1288-1289
Steel Users Expected to Work Reform.....1291
Business Trend Charts.....1293-1296
New Congress Free of Bloc Control—By F. B. Pletcher.....1316
Election of Coolidge Gives Country Greatest Opportunity—By E. H. Gary.....1318

Yesterdays in Industry..1290
Men Of Industry.....1317
Here and There in Industry.....1319
Obituary.....1320
Machinery Market Report.....1321
Crane Awards and Inquiries.....1322
Business Changes.....1323
Construction and Enterprise.....1326, 1327, 1330
New Trade Publications 1330

Tracing the Many Uses of Steel

THE first article in Iron Trade Review's series, "Large Uses of Steel in Small Ways," was published in the issue of Nov. 22, 1923. Twenty-five have been printed during the year that has elapsed, the twenty-fifth appearing on page 1311 of this number. "Large Uses of Steel in Small Ways" has proved to be one of the most instructive



Operating Modern Fire Clay Plant. Page 1297.

features of an industrial paper. These articles are being used by a number of companies as material for discussions or texts at sales conferences or classes. Iron Trade Review began the analyses of finished steel distribution by principal consuming groups in its annual four years ago. "Large Uses of Steel in Small Ways" described some of the minor, yet highly important channels of distribution. Three points always are defined: The amount of steel used, the character of the steel, and how it is fabricated. They are prepared by members of the editorial staff of Iron Trade Review.

Cross Sections of Industry

"About 10 jib cranes in an average forge shop is the standard equipment, except where exceptionally heavy forgings are made."—*From IRON TRADE REVIEW'S Survey, "Jib Cranes".*

Pig Iron Buying Movement Places 600,000 to 700,000 Tons on Makers' Books—Price Advances in All Principal Districts

PITTSBURGH, Nov. 11.—The long-looked-for active pig iron market has arrived. Prices are showing a stiffening tendency. The minimum is up 50 cents since a week ago. First quarter inquiries pending aggregate 50,000 to 75,000 tons. Sales in the past few days aggregate 10,000 to 15,000 tons. The Standard Sanitary Mfg. Co. is in the market for approximately 30,000 tons for three plants. It wants No. 2 and No. 2X iron, including 6000 tons to 10,000 tons of southern iron for Louisville. The National Radiator Co., New Castle, wants 2500 tons for Trenton, N. J. The Westinghouse Air Brake Co. is inquiring for 2000 tons and the Westinghouse Electric & Mfg. Co. wants a larger quantity of iron. Trade Products Co. inquiries for 5000 tons for delivery 1000 tons monthly until April 1. Various speculative inquiries are out. Several other consumers are inquiring for 1000 to 5000 tons, including the Columbiana Foundry, McKeesport, which wants 1000 tons of No. 2. This grade now is quoted $19.50 to $20, valley, for prompt and future delivery, although some makers now are withdrawing all quotations below $20. Several sales are noted for first quarter at $19.50, including 5000 tons to the United States Sanitary Mfg. Co., Monaca, Pa. Numerous smaller lots of 500 tons to 1000 tons carried the same base figure. Other markets are stronger. The Bethlehem base price is $21.50; Ironton, $20.50. One or two interests have shown a disposition to book iron for delivery before Jan. 1 at $19, base, taking some business during the past week. Valley producers sold 2000 tons of malleable at $19.50, but $20 now is quoted. Basic iron is inactive, except for a sale of 2000 tons. A malleable castings producer in the valley closed partly below $19 and partly above. The market now is quoted $19 to $19.50. Some valley Bessemer also is up. One valley producer is selling two lots, including 1000 tons for the first quarter, at $20.50 valley. The Mesta Machine Co. now is buying 500 tons.

Buying Interest Expands

Boston, Nov. 11.—Pig iron sales and inquiries improved during the past week in New England. Textile machine manufacturers are more active and are starting to buy for the remainder of this year, and in some cases for first quarter. Stove manufacturers also are coming into the market and this added to an upward price tendency gives strong indication of a buying movement. Sales of the past week include two 1000-ton lots to stove manufacturers, 500 tons to a textile manufacturer, 500 tons to a malleable foundry, and 300 tons to an electrical goods manufacturer. Prices have advanced about 50 cents during the week and now are fairly well established at $21 base, in eastern Pennsylvania or $24.65 delivered and $20, Buffalo, or $24.91 delivered. A little resale Buffalo iron still is before the trade at $19.50. One of the 1000-ton lots placed during the past week was for No. 2 plain iron, (1.75 to 2.25 silicon) at $19 Buffalo, or $23.91 delivered. It is doubtful whether this price could be duplicated today even for a larger tonnage. The foundry melt throughout the district has materially improved.

Sales Total 40,000 Tons

New York, Nov. 11.—A banner business has been done here in pig iron in the past week. It is believed the total for this period has been fully 40,000 tons. A good deal of tonnage still is pending. Prices are higher. Buffalo foundry sold at $19.50 base furnace in a number of instances, and the price now seems firm at $20, base Buffalo. Eastern Pennsylvania foundry now appears to be holding firmly at $21, base furnace, as far as new business is concerned, although some transactions were put through at less. The largest buyer of the past week was the Central Foundry Co. which bought 12,000 tons of foundry for its various plants. The New York Air Brake Co. bought 5500 tons. The Thatcher Furnace Co. bought what is understood to have aggregated around 5000 tons. The Ingersoll, Rand Co. bought a total for Painted Post, N. Y., understood to have aggregated 3000 tons. Numerous smaller tonnages have been closed. The American Radiator Co. has not yet closed on its inquiry for 12,000 tons for Bayonne, N. J. The Richardson & Boynton Co. yesterday put out an inquiry for 5000 tons, half for fourth quarter and the other half for first quarter, equally divided between 1.75 to 2.25 silicon and 2.25 to 2.75 silicon. The Burnham Boiler Corp. is buying tonnage for first quarter. A good many smaller inquiries are pending. Current sales include 5000 tons of iron from Holland, one lot of 2000 tons of such iron and another of 1800 tons.

Eastern Prices Advancing

Philadelphia, Nov. 11.—A sharply advancing tendency is noted in pig iron prices. The leading eastern maker now quotes $22, base furnace, as its foundry minimum, with sales at this figure. Elsewhere $21 to $21.50, base, are the minimum figures for any delivery. So rapid has the movement been that it is not certain whether $20.50 has disappeared, but nothing under $21 is quoted. New demand is broadening. The Pennsylvania railroad closed for about 5000 tons of foundry iron for first quarter. The United States Cast Iron Pipe & Foundry Co. seems to have bought a considerable additional tonnage. The National Radiator Co. is inquiring for 2500 tons of foundry iron for Trenton, N. J. Several other round inquiries are out but most inquiries involve small tonnages, comprising a substantial total. A surprising feature is the extent to which consumers are inquiring for iron for this year. It was thought most of this year's requirements had been placed. It is conjectured that price advances may encourage some additional production, as present output is a minimum. Nothing definite is yet heard about blowing in furnaces. Moderate sales of low phosphorus iron are noted, in some cases at an advance of $1 to $25, furnace, for the copper-bearing grade. Copper-free iron is unchanged. A round lot of basic was sold establishing the market at $21.25 to $21.75, delivered.

Buffalo Sales Are Large

Buffalo, Nov. 11.—Heavy covering of first quarter pig iron requirements, before the advance in prices, enabled Buffalo furnaces to book 50,000 to 60,000 tons of new business during the first week of November, according to conservative estimates. No single lot was more than 3000 tons, it is stated by sellers. The bulk of the business was placed at $19.50, base. The American Radiator Co. is understood to have purchased more than 40,000 tons for first quarter delivery, of which only 3000 tons was for Buffalo. Not much iron

will be bought by this consumer in this market now as it is making iron for its Buffalo and Titusville plants at Tonawanda. It is generally believed the radiator purchases were made at $19, or possibly as low as $18.50 in some outside districts. At least two Buffalo makers have established a minimum of $20 for their first quarter base and claim to be insisting on full differentials. Bookings have been light since the advance was put into effect, and new inquiry is small in comparison with last week's total of 25,000 to 30,000 tons. Rogers, Brown & Co., this week will blow in its fourth furnace, placing its Buffalo production at capacity. Fourteen of the 22 furnaces of the district now are in blast.

ment. Southern iron ranges from $17.50 to $18 Birmingham base for the same delivery. The market reflects more activity than for some time past. The leading cast iron pipe maker has closed for 6000 to 8000 tons of northern iron for first quarter delivery to its plant in the district. The Globe Stove & Range Co., Kokomo, Ind., bought 1500 tons of northern iron, while the Union Sanitary Co., Noblesville, Ind., purchased 800 tons of southern. A sale of 500 tons of the same grade to the John B. Morris Foundry Co., Cincinnati also was noted, while the Star Foundry Co., Troy, O., closed for 200 tons. Inquiries include one from the Swain-Robinson Co., Richmond, Ind., for 1500 tons of northern iron. The Superior Gas Engine Co., Springfield, O., wants 1500 tons of the same grade. The Standard Sanitary Mfg. Co. is reported to be in the market for 10,000 tons of northern and southern iron for its Louisville plant. Other inquiries involve 200 to 500 tons, mostly for first quarter.

years. One merchant interest figures the record of its sales in the past week at 80,000 to 90,000 tons, and its total for the last two weeks as well over 100,000 tons. Two Cleveland producers collectively have booked about 100,000 tons in the past week, and another lake furnace company's sales for the week amount to 35,000 tons. The American Radiator Co. closed for its plants served by the furnace represented here, and with eastern and Chicago plants the total is believed to be over 40,000 tons. Other radiator companies are making purchases. Sanitary ware manufacturers and makers of electrical goods are in the market. One of these has out an inquiry for 10,000 tons; another for 3000 tons. The demand for malleable iron is heavier than it has been in months. The largest single demand for basic was on an inquiry for 5000 tons monthly for the first quarter for the Unitel Alloy Steel Co., and this is reported to have been closed around $19 furnace. One Cleveland sellers states it is sold up for the remainder of this year and the first quarter.

Much of the tonnage was closed on protected prices, given just prior to election. A few users nearby say they were able to obtain $19, Cleveland furnace, last week but that price has disappeared. The one company now quoting is asking $20, furnace, for outside delivery and $21, furnace, for local delivery, this representing an advance of 50 cents. On some lots for delivery outside as high as $20.50, Cleveland furnace, was received by one

(*Continued on Page* 1276)

Prices Present and Past

Representative market figures yesterday, and for last month, three months ago and one year ago

	Nov. 12, 1924	Oct., 1924	Aug., 1924	Nov., 1923
PIG IRON				
Bessemer valley del., Pitts....	$21.76	21.76	21.76	25.47
Basic, valley	19.00	19.00	19.00	20.80
Basic, eastern del., eastern Pa.	21.51	20.00	20.00	22.60
*No. 2 foundry, del. Pitts....	21.26	21.26	21.01	23.77
No. 2 foundry, Chicago	21.00	20.50	20.40	23.30
*Southern No. 2, Birmingham..	17.50	17.50	17.90	19.25
*Southern Ohio, No. 2, Ironton	20.50	20.00	19.75	22.50
**No. 2X, Virginia furnace....	24.50	24.50	24.50	25.00
**No. 2X, eastern, del. Phila....	22.26	21.36	21.76	23.01
Malleable, valley	19.50	19.50	19.00	20.40
Malleable, Chicago	21.00	20.50	20.40	23.30
Lake Superior charcoal, Chicago	29.04	29.04	29.04	28.65
Gray forge, val., del. Pittsburgh	20.26	20.76	20.51	23.27
Ferromanganese, del., Pitts.....	104.79	104.79	98.79	113.79
SEMIFINISHED MATERIAL				
Sheet bars, bessemer, Pittsburgh	37.00	37.20	38.00	42.50
Sheet bars, open-hearth, Pitts....	37.00	37.20	38.00	42.50
Billets, bessemer, Pittsburgh	35.50	36.60	38.00	41.50
Billets, open-hearth, Pittsburgh.	35.50	36.60	38.00	41.50
FINISHED MATERIAL				
Steel bars, Pittsburgh	2.00	2.00	2.10	2.40
Steel bars, Chicago	2.00	2.00	2.15	2.50
Steel bars, Philadelphia	2.32	2.32	2.47	2.72
Iron bars, Philadelphia	2.32	2.32	2.42	2.62
Iron bars, Chicago mill	2.10	2.10	2.15	2.40

*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.

	Nov. 12, 1924	Oct., 1924	Aug., 1924	Nov., 1923
FINISHED MATERIAL (Continued)				
Beams, Pittsburgh	2.00	2.00	2.05	2.50
Beams, Philadelphia	2.07	2.12	2.32	2.72
Beams, Chicago	2.10	2.00	2.15	2.60
Tank plates, Pittsburgh	1.80	1.80	2.00	2.50
Tank plates, Philadelphia	2.02	1.92	2.07	2.72
Tank plates, Chicago	2.10	2.00	2.15	2.60
Sheets, blk., No. 28, Pittsburgh	3.50	3.40	3.50	3.75
Sheets, blue anl., No. 10, Pitts.	2.60	2.60	2.70	3.00
Sheets, galv., No. 28, Pittsburgh	4.60	4.60	4.60	4.85
Sheets, black, No. 28, Chicago ..	3.65	3.65	3.85	4.10
Sheets, blue anl. No. 10 Chicago	2.85	2.85	3.05	3.35
Sheets, galv. No. 28, Chicago ..	4.75	4.75	4.95	5.20
Wire nails, Pittsburgh	2.75	2.75	2.85	3.00
Wire nails, Chicago	2.90	2.90	3.15	3.35
COKE				
Connellsville furnace, ovens.....	3.00	3.00	3.00	3.80
Connellsville foundry, ovens	4.00	4.00	4.00	4.85
OLD MATERIAL				
Heavy melting steel, Pittsburgh	20.00	18.20	17.75	15.70
Heavy melting steel, eastern, Pa.	17.50	17.20	17.00	15.50
Heavy melting steel, Chicago..	17.00	16.25	15.40	13.80
No. 1 wrought, eastern Pa.....	18.75	18.75	18.50	17.75
No. 1 wrought, Chicago	16.75	15.95	15.75	14.10
Rails for rolling, Chicago	17.50	17.20	16.00	15.10

Composite Market Average

Representing the Combined Average Prices Per Ton of Fourteen Leading Iron and Steel Products Yesterday, One Week, One Month, Three Months, One Year and Ten Years Ago.

Nov. 12, 1924	Nov. 5, 1924	Oct., 1924	August, 1924	Nov., 1923	Nov., 1914
$38.79	$38.56	$38.65	$39.33	$42.81	$23.39

Products Included Are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

Valley Price Advanced

Youngstown, O., Nov. 11.—Youngstown Sheet & Tube Co. booked orders for 25,000 tons of pig iron from its Youngstown district furnace during the week and secured additional tonnages for its Chicago district furnaces in excess of 50,000 tons. President J. A. Campbell has announced prices have been advanced to $19.50 for basic and $20, base for foundry in this district.

Forward Deliveries Wanted

Cincinnati, Nov. 10.—The increasing interest of buyers in pig iron for first quarter continues a conspicuous feature. For the most part the southern Ohio market is firm at $20.50 Ironton, base, the leading producer asking that price for prompt and first quarter shipments.

Large Sales Reported

Cleveland, Nov. 11.—A flood of business has come into the pig iron market since election. Leading producers with headquarters here report sales totaling 225,000 tons, and with orders booked a week or 10 days preceding election, the full amount closed to date in the buying movement probably reaches 300,000 tons. A large volume still is pending in the form of inquiries, variously estimated at 50,000 to 100,000 tons. Sellers say the market has not been so active in several

Iron and Steel Prices

SCRAP PRICES, PAGE 1332; WAREHOUSE, PAGE 1324; ORE, NUTS, BOLTS AND RIVETS AND PIPE PRICES, PAGE 1328

Pig Iron

Prices per gross ton

Bessemer, valley	$20.00 to 20.50
Bessemer, Pittsburgh	21.76 to 22.26
Basic, valley	19.00 to 19.50
Basic, Pittsburgh	20.76 to 21.26
Basic, Buffalo	19.00
Basic del., eastern Pa.	21.26 to 21.76
Malleable, valley	19.50 to 20.00
Malleable, Pittsburgh	21.26 to 21.76
Malleable, Cleveland, del.	21.50
Malleable, Chicago	21.00
Malleable, Buffalo	19.00 to 19.50
Malleable, del., eastern Pa.	22.26 to 23.76

FOUNDRY IRON SILICONS

No. 2 Northern	1.75 to 2.25
No. 2 Southern foundry	1.75 to 2.25
No. 2X Eas'n and Virgina	2.25 to 2.75
No. 1X Eastern	2.75 to 3.25
No. 1 Chicago	2.25 to 2.75
No. 2 foundry Eastern	1.75 to 2.25

No. 1X, eastern del., Phila.	23.26 to 24.26
No. 1X, Buffalo	21.00 to 21.50
No. 1 foundry, Chicago	21.50
No. 2 foundry, valley	19.50 to 20.00
No. 2 foundry, Pittsburgh	21.26 to 21.76
No. 2 foundry, Buffalo	19.50 to 20.00
No. 2 foundry, Chicago	21.00
No 2 foundry, Granite City	21.50 to 22.00
No. 2 foundry, Ironton fur.	20.50
No. 2 foundry, Cleveland, del.	21.50
No. 2 foundry, del., Phila.	21.76 to 23.76
No. 2 foundry, N. J., tidewater	23.14 to 23.89
No. 2X, eastern del., Phila.	22.26 to 23.76
No. 2X, ast. N. J. tidewater	23.14 to 23.89
No. 2X, eastern del., Boston	23.65 to 24.15
No. 2X, foundry, Buffalo fur.	20.00 to 20.50
No. 2X, Buffalo, del., Boston	24.41 to 25.41
No. 2 southern, Birmingham	17.50 to 18.00
No. 2 southern, Cincinnati	21.05 to 22.05
No. 2 southern, Philadelphia	25.10 to 25.80
No.2 southern, Chicago	23.51 to 24.01
No 2 southern, Cleveland	23.51 to 25.01
No. 2 southern, Boston (rail and water)	24.41 to 24.91
No. 2 southern, St. Louis	22.67 to 23.17
No. 2X, Virginia furnace	24.50
No. 2X, Virginia, Phila.	29.67
No. 2X, Virginia, Jersey City	30.04
No. 2X, Virginia, Boston	30.42
Gray forge, eastern Pa.	21.50 to 22.00
Gray forge, val. del., Pitts.	20.26 to 20.76
Low phos., standard, valley	28.00 to 29.00
Low phos., standard, Phila.	27.79
Low phos., Lebanon, furnace	24.00 to 25.00
Charcoal, Birmingham	30.00
Charcoal, Superior, Chicago	29.04

Silvery iron, Jackson county, Ohio, furnace, 7 to 8 per cent, $29.00; 8 to 9 per cent, $30.50; 9 to 10 per cent, $32.50; 10 to 11 per cent, $34.50; 11 to 12 per cent, $37.00; 12 per cent, $39.50.

Bessemer ferrosilicon, Jackson county, Ohio, furnace, 10 to 11 per cent, $39.50; 11 to 12 per cent, $42.00; 12 to 13 per cent, $44.50.

Silvery and bessemer ferrosilicon prices subject to some shading.

Ferroalloys

†Ferromanganese 78 to 82 per cent, tidewater, or furnace first hand and resale	$100.00
Ferromanganese delivered Pittsburgh	104.79
Spiegeleisen 19 to 21 per cent domestic furnace or tidewater	31.00
Ferrosilicon, 50 per cent contract freight allowed	72.00 to 75.00
Ferrotungsten standard, cents per pound contained	86.00 to 88.00
Ferrochrome, 60 to 70 chromium, 6 to 8 carbon, cents per pound contained, del.	10.00 to 10.25
Ferrovanadium, 30 to 40 per cent per pound estimated, according to analysis	3.25 to 3.75
Ferro-carbon-titanium, car lots, producer's plant, net ton	200.00

†Duty paid.

Coke

Beehive, Ovens
Prices per net ton

Connellsville, furnace	3.00 to 3.25
Connellsville foundry	4.00 to 4.50
New river foundry	8.50 to 9.00
Wise county furnace	3.75 to 4.00
Wise county foundry	4.50 to 5.00
Alabama furnace	4.25 to 4.50
Alabama foundry	4.50 to 5.00

By-Product

Foundry, Newark, N. J., del.	$10.41
Foundry, Chicago, ovens	10.75
Foundry, New England del.	11.50
Foundry, St. Louis	11.00
Foundry, Granite City, Ill.	9.00
Foundry, Alabama	4.50 to 5.00

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS
4 x 4-inch and larger

Pittsburgh and Youngstown	$35.50 to 36.00
Philadelphia	40.80
Chicago	35.00 to 37.00
Forging, Pittsburgh	40.50 to 42.00
Forging, Philadelphia	45.30

SHEET BARS

Pittsburgh and Youngstown	37.00

SLABS

Pittsburgh	35.50 to 36.00
Youngstown	35.50

WIRE RODS
¼-inch and finer

Wire rods, Pittsburgh	$45.00 to 46.00
Wire rods, Cleveland	46.00
Wire rods, Chicago	49.00

Standard extras, $2.50 per ton over ¼-inch; $5 for screw stock; $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

Grooved skelp, Pittsburgh	1.90c to 2.00c
Universal skelp, Pittsburgh	1.90c to 2.00c
Sheared skelp, Pittsburgh	1.90c to 2.00c

Structural Shapes

Prices per pound

Pittsburgh	2.00c
Philadelphia	2.02c to 2.12c
New York	2.04c to 2.14c
Chicago	2.10c
Cleveland	2.09c to 2.19c
Birmingham	2.05c to 2.15c

Steel Plates

Pittsburgh	1.80c to 1.90c
Philadelphia	2.02c
New York	2.04c
Chicago	2.10c
Cleveland	1.99c to 2.09c
Birmingham	2.05c to 2.15c

Iron and Steel Bars

Pittsburgh, soft steel	2.00c
Pittsburgh, cold finishing	2.15c
Pittsburgh, forging quality	2.25c
Philadelphia, soft steel	2.22c to 2.32c
New York, soft steel	2.24c to 2.34c
Chicago, soft steel	2.00c
Cleveland, soft steel	2.09c to 2.19c
Birmingham, soft steel	2.05c to 2.15c
San Francisco, soft steel	2.45c
Pittsburgh, refined iron	2.80c to 4.50c
Pittsburgh, reinforcing billet	2.00c
Chicago, rail steel	2.03c to 2.13c
Mill, rail steel	1.90c to 2.00c
Philadelphia, common iron	2.32c
New York, common iron	2.34c
Chicago, common iron	2.10c to 2.15c

Hoops, Bands, Strip

Prices per pound f.o.b. mills

Hoops, Pittsburgh, under 5 in.	2.50c to 2.60c
Hoops, Pittsburgh, 20 gage, under 1 in.	2.75c to 2.90c
Bands, Pittsburgh	2.40c to 2.50c
Hot rolled strip steel, Pittsburgh stamping quality	2.40c to 2.50c
Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100-inch and heavier, base, Pittsburgh, Cleveland	4.00c

Chicago and Worcester, Mass. $3 per ton higher.

Cold Finished Steel

Prices per pound

Cold finished steel bars, drawn or rolled Pittsburgh, Chicago, carloads	2.70c
Less carloads	3.95c
Steel shafting, turned and polished Pittsburgh, Chicago	2.70c

Screw stock base Cleveland $1 higher; and Worcester $3 higher than Pittsburgh and Chicago.

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-hearth rails, mill	43.00
Relaying rails, St. Louis	27.00 to 32.50
Relaying rails, Pittsburgh	27.00 to 30.00
Light rails, 25 to 45, mill	1.80c to 1.85c
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.70c to 2.80c
Spikes, small railroad, 7/16-inch and smaller, Pittsburgh	3.00c to 3.15c
Spikes, boat and barge, Pitts.	3.25c
Spikes, railroad, Chicago	2.80c
Track bolts, Pitts. standard	3.75c to 4.00c
Track bolts, Chicago	3.80c
Tie plates, Pittsburgh	2.30c
Tie plates, Chicago	2.30c

Spike, tie plate and truck bolt prices for carlots.

Wire Products

To Jobbers in Carloads
Prices per pound

F.o.b. Cleveland and Pittsburgh base	
Wire nails	2.75c
Galv'd nails, 1-inch and over	5.00c
Plain wire	2.50c
Annealed wire	2.65c
Galvanized wire, No. 9 gage	3.10c
Barbed wire, painted	3.20c
Barbed wire galvanized	3.45c
Polished staples	3.20c
Galvanized staples	3.45c
Coated nails, count keg	2.10c to 2.15c
Woven wire fencing (retailers) 12½ gage, 26-in. high 7 bars and 12-in. stays per 100 rods, f.o.b. Pittsburgh	$20.03

Joliet, DeKalb and Waukegan, Ill., $2 per ton over Cleveland-Pittsburgh base on products made there, Worcester and Fairfield, Ala. $3 higher. Duluth $4 higher. Chicago delivered price $3 higher, Anderson, Ind., $1 higher.

Sheets

Prices per pound

SHEET MILL BLACK

No. 28, Pittsburgh base	3.50c
No. 28, Philadelphia, delivered	3.62c to 3.82c
No. 28, Gary, Indiana Harbor	3.60c
No. 28, Chicago, delivered	3.65c

TIN MILL, BLACK

No. 28, Pittsburgh base	3.50c
No. 28 Gary base	3.60c

GALVANIZED

No. 28, Pittsburgh, base	4.60c
No. 28, Philadelphia, delivered	4.82c to 4.92c
No. 28, Gary, Indiana Harbor	4.70c
No. 28, Chicago, delivered	4.75c

BLUE ANNEALED

No. 10, Pittsburgh, base	2.70c
No. 10, Philadelphia, delivered	2.92c to 3.02c
No. 10, Gary, Indiana Harbor	2.80c
No. 10, Chicago, delivered	2.85c

AUTOMOBILE SHEETS

No. 22, Pittsburgh, base	4.60c

Tin Plate

Prices per 100-pound box, Pittsburgh

Tin plate, coke base	$5.50

Gary, Ind. base 10 cents higher

Iron and Steel Pipe

Base Discounts Pittsburgh and Lorain, O. to Jobbers in Carloads

	Black	Galv.
1 to 3-inch, butt steel	62	50½
1 to 1½-inch, butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less and $4 per ton higher. Chicago delivered 2½ points less and $5 per ton higher.

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional—f.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	38½
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled, 3½ to 3¾-inch	35

Chain, Piling, Cut Nails

Prices per pound

Chain, 1-in. proof coil, Pitts.	6.00c
Sheet piling base, Pittsburgh	1.95c to 2.05c
Cut nails, f.o.b. mills	2.90c

Hot Rolled Alloy Steels

Price per pound, Pittsburgh base

S. A. E. Series—	
2300 (3½ per cent nickel)	4.75c
3100 (nickel chromium)	3.65c to 3.75c
6100 (chrome vanadium)	4.50c to 4.75c
6100 (Chrome vanadium spring)	4.00c to 4.25c
9250 (Silico manganese spring)	3.15c to 3.50c

Billets—4 x 4 to 10 x 10, gross ton at net ton bar price; under 4 x 4 to 2½ x 2½-inch, $5 higher.

Chicago base $2 per ton above Pittsburgh.

Scrap Holds Firmer Tone

Demand Increases, Prices Rise and Dealers Make Much Activity—General Betterment in All Markets—Large Tonnages Bought

SCRAP PRICES, PAGE 1332

Chicago, Nov. 11.—Consumers are becoming more interested in iron and steel scrap as their order books grow but most of them are quiet concerning their scrap requirements in view of the boiling market worked up by dealers. The market is now $17 to $17.50 for heavy melting steel; trading among dealers has not topped $17.50 but they have paid railroads as high as $18. It is reported Inland Steel Co. has placed from 15,000 to 20,000 tons of steel at $17.50. The busheling grades are more active in the light of some recent buying by a bar iron interest and a maker of track fastenings. Malleable grades are more active but cast grades so far have moved little. Most iron and steel scrap dealers look for a bull market over the remainder of the year. Railroad scrap offerings include 3400 tons by the Santa Fe, 1700 tons each by the Northern Pacific and the Missouri, Kansas & Texas, 600 tons by the Monon and 450 tons each by the Soo Line and the Fruit Growers Express.

Boston Prices Firmer

Boston, Nov. 11.—While inquiry for iron and steel scrap has improved noticeably since election, the tonnage moving is still low. Dealers who have held stocks for many weeks in anticipation of an advance, are now reluctant to sell until prices have received a more substantial boost. Foundry stocks are low and recent market improvement in the textile industry is creating a desire among textile machine manufacturers to increase all supplies of raw material. Prices in all grades of scrap are firmer. Heavy melting steel has sold for delivery within the district as high as $12.50 shipping point. Recent sales include 700 tons by the Boston & Albany and 1000 tons by the Boston Elevated railroad.

Stronger In The East

New York, Nov. 11.—Despite stronger sentiment, scrap dealers' buying prices so far remain unchanged. However, an advance of 50 cents on several grades should develop within the next week or 10 days, for scrap producers generally anticipating a higher market, are holding supplies where possible. Consuming demand the past week has been spotty, and has involved little tonnage. Railroad steel or the equivalent for Bethlehem, Pa., is being bought by dealers on back orders at $16, delivered.

All Grades Are Advanced

Pittsburgh, Nov. 11.—The iron and steel scrap market is much stronger and advances of 50 cents to $1.50 per ton have been made on practically all grades on the basis of sales. These start with heavy melting steel which has been bought at Midland, Pa., and Steubenville, O., at $20 to $20.50. With what was purchased at Canton, Youngstown and Warren, O., six steel mills have covered approximately 50,000 tons at $19 to $20 in the past week. Other grades have moved in smaller quantities, 100 to 500 ton lots, but these steel foundries have been active buyers of specialties, paying $21 to $21.50. For knuckles and couplers the demand has been somewhat heavier, and $22 to $22.50 has been paid. Cast grades still are weak because of low pig iron prices. Shovel turnings used in blast furnaces which usually command a higher figure than machine shop turnings, remain at $1 less than the latter, small lots being bought at $15 to $15.50. A nearby open hearth furnace operator has purchased machine shop turnings at $16 to $16.50. As high as $17 has been paid for heavy breakable cast and several other grades have been advanced similarly. Compressed sheets are now quoted at $17.50 to $18, with bundled sheets $1.50 less. A producer of compressed sheets at Canonsburg, Pa., sold its output at $16.50 on a freight rate of $1.39. Bids on the Pennsylvania railroad's list were comparatively high and while some of the heavy melting steel went in the Youngstown district at around $20 per ton, $20.35 was paid for a large quantity here. Similarly high prices prevailed on the other grades disposed of by that road.

St. Louis Market Buoyant

St. Louis, Nov. 10.—Extreme buoyancy and a considerable degree of excitement among dealers are features in the market for iron and steel scrap. Since the election speculative enthusiasm on the part of the middlemen has resulted in a sharp upward revision in prices, affecting virtually every item. There has been some increased buying by consumers, but generally melters are disposed to hold off until they can form a more accurate idea.

A round tonnage of wrought and cast grades was purchased by a car builder, and foundries have purchased in a scattering manner, but steel mills are apparently in no hurry to enter the market. Blast furnace grades have been active and inquiry for such material, coupled with scant stocks, indicates that a further advance is likely. Rolling mill grades are strong and higher, but buying except among dealers has been small. Yard stocks are still of moderate proportions, and efforts to recoup them has resulted in stiff prices being bid on all recent railroad offerings. Railroad lists include 4000 tons by the Missouri Pacific, 750 tons by the Pullman Co., 2000 tons by the Mobile & Ohio, 8500 tons by the Norfolk & Western, 7000 tons by the Illinois Central and 500 tons by the Frisco.

Southern Market Dull

Birmingham, Ala., Nov. 10.—Readjusted quotations and other concessions have not bettered the iron and steel scrap market, and dullness is still pronounced. Consumers are buying practically nothing. Heavy melting

(*Concluded on Page* 1283)

Expect More Steel Buying

Makers of Semifinished Material See Improvement in Market Not Far Off—Some Inquiries for First Quarter—Sheet Bar Sales in Valley

SEMIFINISHED STEEL PRICES, PAGE 1273

Youngstown, O., Nov. 11.—Buying of semifinished material is confined largely to sheet bars. Many consumers of this product are not under contract for their requirements this quarter but are taking tonnages right along as sheet orders warrant. District semifinished producers are quoting sheet bars at $37, Youngstown, and contemplate no downward revision in view of the business outlook for the first quarter. With the sheet industry at present undergoing a change for the better after several weeks of unprofitable operation, semifinished producers expect an increase in the demand for sheet bars, before long. The billet and slab market continues dull with producers holding billets, 4 x 4 inches and larger, and slabs at $35.50 and smaller billets at $37, Youngstown.

Billet Sales Moderate

Philadelphia, Nov. 11.—Billet sales are moderate. Rerollers are $35.50, Pittsburgh, or $48, delivered Philadelphia. Forging billets are $40, Pittsburgh, or $45.30, Philadelphia. Wire rods are $45 to $46, Pittsburgh.

Expect Higher Figures

Pittsburgh, Nov. 11.—Unmistakable signs of improvement in the finished steel market are expected to be reflected shortly in semifinished materials. Buyers as yet have not manifested much confidence in the future even to the extent of issuing inquiries. They continue to order only material absolutely needed. Some billet buying has taken place at $35.50 and $36 for 4 x 4-inch rerolling billets and a few slab orders have come through at those figures. The major portion of semifinished activity, however, continues to revolve about contract specifications. One or two forging billet buyers have delayed sending in their specifications but most of these are coming through on time at $40.50 to $42. No new sheet bar business is coming up but the price still is $37. Wire rods are unchanged at $45 to $46 with the tendency among sellers to avoid the lower figure although shipments on $45 contracts are going forward regularly by one or two makers here. Some buyers of wire rods whose business has been interfered with greatly by the abolition of the Pittsburgh-plus method of quoting prices are not sending in their specifications. Skelp is inactive at 1.90c to 2.00c, with the possibility of an early advance making the 2.00c figure the market's minimum.

Inquiries Appearing

Cleveland, Nov. 11.—Inquiries have come out for good size tonnages of sheet bars, billets and slabs for the

first quarter, but the leading maker in this district is refusing to open its books for that period at this time, believing better prices will prevail. Requirements for the remainder of this quarter are practically all closed, and specifications are being received. The nominal quotations on current business for prompt delivery are $37.50 on sheet bars and $37 on billets and slabs, Cleveland mill.

Uneventful Market

Rules in Ferroalloys—Small Sales of Ferromanganese and Spiegel Made

FERROALLOY PRICES, PAGE 1273

Pittsburgh, Nov. 11.—That the ferroalloys market is shaping itself for a buying movement, is the widespread feeling in the trade here although some believe it is too early to expect first quarter covering. Most buyers of ferromanganese covered for their needs for the last quarter in the last buying movement in August and some bought for larger consumption than they have been realizing. Hence, some of this material will go over into January, according to present indications.

One or two companies bought all of their first quarter needs of imported ferromanganese in August. The market now is firm at $100 on both domestic and imported. No sales are noted outside of a single carload or two now and then but a few inquiries are out, including one for 100 tons and another for between 350 and 500 tons.

Some activity has been noted in spiegeleisen in lots of 100 to 500 tons at a time. On the smaller lots, $32 has been done and on the 500, 600 or 700-ton inquiries $31 has been quoted on the 19 to 21 per cent material. One inquiry is out now for 400 or 500 tons, which may possibly be extended to 800 to 1200 tons.

Other special alloys are quiet. One order came through this week for a carload of 6 to 8 per cent carbon ferrochrome at 10¼ cents, point of shipment. An occasional 50 to 150-ton specification comes through on 50 per cent ferrosilicon orders taken at $75, freight allowed, although in the spot market lower levels prevail with some sellers. One small order was taken this week for ferrovanadium at a price of $3.75.

Moderate Sales Are Closed

New York, Nov. 11.—Moderate sales of ferromanganese have been closed at the customary price of $100, tidewater duty paid. Some activity has developed in spiegeleisen. About 1000 tons have been sold around $31, furnace. Fair sized sales of fluorspar have been noted during the week at unchanged prices.

Some Sales Are Made

Chicago, Nov. 11.—Two lots of ferromanganese totaling several hundred tons have been closed in this district at $100, seaboard, duty paid. It is reported that a $5 advance in ferromanganese may develop in the near future. Several inquiries are current for spiegeleisen which is quoted at $32, New Orleans. One sale of 100 tons has been made to the Crane Co.

Coke Inquiry Is Picking Up

Activity in Pig Iron Market Leads Furnace Companies To Seek First Quarter Contracts—Hope To Close at $3.15

COKE PRICES, PAGE 1273

Pittsburgh, Nov. 11.—Pig iron producers, faced with an improved market, are getting anxious to close for first quarter coke contracts. The list includes almost every active furnace company, such as the Shenango Furnace Co., Hanna Furnace Co., the Rogers-Brown Iron Co., and several eastern stacks. These usually take 8000 to 12,000 tons monthly. A few furnaces now inactive may blow in. The latter also are inquiring quietly into coke prices. While the spot market remains unchanged at $3 to $3.10 or $3.15, nothing below $3.25 now is quoted for next quarter. Some makers want $3.35, although consumers hope to close at $3.15 maximum. All coke contracts written or about to be closed carry a wage clause, and improvement in business will necessitate producers going back to the Frick scale, which will mean revising contracts upward, increasing the cost of coke 60 cents to $1 a ton. This increased cost will be passed on to pig iron costs. Warmer weather is causing a weak market for medium sulphur heating coke. While large tonnages wanted by smelters and refiners bring $2.85 to $3, small lots are available around $2.75. Standard selected foundry coke is unchanged at $4 to $4.50. Around $4.75 is quoted on the coke in box cars. Prices of $5 and higher are quoted on premium brands. Only small lots are being moved. Little or no contracting is done as yet for delivery next year.

Production of Connellsville coke for the week ended Nov. 1 was 84,970 tons as compared with 96,440 tons the preceding week, according to the *Connellsville Courier*

Book 60,000 Tons

New York, Nov. 11.—The two New England by-product coke makers actively booked foundry business during the week for shipment over the first quarter or first half of next year. It is understood the total so far sold is fully 60,000 tons. The Providence maker now has withdrawn, the Everett maker still being in the market. The business was taken at prices ruling at time of shipment. The northern New Jersey by-product coke maker now is willing to take on first quarter or first half foundry coke business but so far there has been no demand. This maker also would take this business at the prices ruling at time of shipment. The spot market on by-product foundry coke is $10.41 delivered at Newark and other northern New Jersey consuming points. A well-known beehive coke maker now is soliciting forward business in foundry coke and is offering first quarter and first half at $5.25, Connellsville, for open top cars and $5.50 for box cars. So far the business taken has been small. Spot beehive foundry coke continues to range from $4.25 to $5.25, Connellsville, according to brand, and the demand is small.

Foundries More Interested

Cincinnati, Nov. 11.—Buying by foundry interests features the coke market. Several large consumers who have been refraining from buying ahead are manifesting more interest in the market. While prices show a wide range the tendency is toward higher levels. One local dealer sold approximately 25 cars of New River and Wise county foundry coke for December shipment. Production in the Wise county and New River districts has been increased, while producers of Pocahontas coke have their output for the remainder of this year covered with contracts. The furnace coke situation remains dull but sellers anticipate a revival in business shortly as several furnaces are being prepared to blow in. The furnace of the Globe Iron Co., Jackson, O., will start firing next week. Producers of by-product also report a slight improvement in their trade.

Foundry Demand Brisk

St. Louis, Nov. 10.—Demand for foundry coke continues brisk. November sales make an excellent showing. While most sales are for current use, there has been some increase in stock particularly in the West and Southwest. By-product producers report that they are disposing of their current output of metallurgical coke, and industrial sizes are also going fairly well. Stocks of domestic coke on by-product makers yards are the largest on record for this season. Prices remain unchanged.

Demand Shows Improvement

Birmingham., Nov. 10.—Coke production is a little more active and a better condition is to be observed, but prices are low, quotations for foundry coke, both by-product and beehive, being $4.50 to $5 per ton. All by-product coke ovens in the Birmingham district are working to capacity and beehive oven operation has shown increase in the last few weeks.

Ore Sales Are Small

ORE PRICES, PAGE 1328

Cleveland, Nov. 11.—Small lot sales of Lake Superior iron ore in the past week make a total of about 50,000 tons, at regular market prices. The leading furnace interests in operation have their yards well stocked, and others have sufficient to meet their probable requirements, so that ore producers do not expect any further sales of larger tonnage this year. Receipts of ore at Lake Erie ports for October totaled 4,460,581 tons compared with 6,120,669 tons in the month last year. Receipts for the season thus far are 29,556,228 tons against 39,697,744 tons last year. The balance on Lake Erie docks Nov. 1, was 8,118,921 tons. The tonnage last year was 8,097,488.

Net income of the General Refractories Co., Philadelphia, in the third quarter of 1924 amounted to $135,000. This compares with profits of $33,000, in the preceding quarter.

Bar Buying on Increase

Some Makers Find Sales Double Pre-Election Volume—Prices Firmer and Advance Is Expected on First Quarter Business

BAR PRICES, PAGE 1273

Chicago, Nov. 11.—Buying of finished steel, especially soft steel bars for stock, is at an accelerated pace. Reinforcing bar warehouses in the Chicago district, which have been keeping their stocks down to 50,000 tons, appear to be working up toward their normal of 100,000 tons. Practically every class of user, spurred by the rising price tendency, increasing demand for his own product and the generally favorable business atmosphere following the election, is striving to protect himself further ahead. It appears that with both leading makers of soft steel bars, present commitments will carry them into first quarter. Small business is going as high as 2.10c, Chicago, but round tonnages are commanding 2.00c. An advance to 2.10c, Chicago, for first quarter is said to be under contemplation by one maker. Activity in bars is much greater than in plates and shapes, and one interest finds last week the best since late 1922.

One maker of rail steel bars now has sufficient business to run double turn the remainder of the year. That rail steel will advance, along with soft steel bars and scrap, is in the air, but the range continues 2.00c to 2.10c, mill, with an additional .03c for Chicago delivery.

Bar iron makers are also conjecturing on an advance over the present range of 2.10c to 2.15c, Chicago. One maker reports a slight tapering off in demand, but his backlog has staved off any decrease in operations.

Boston Buyers Wait

Boston, Nov. 11.—The steel bar market at Boston hovers between 2.265c and 2.365c delivered, corresponding to 1.90c and 2.00c Pittsburgh. Consumers apparently lack confidence in price stability and are holding up buying as long as possible. Inquiry is much improved and business is better among bars users. Bar sales in Boston during the past week have held about level although one important producer reports an increase.

Bars Firmer at Philadelphia

Philadelphia, Nov. 11.—Steel bars are firmer and anything under 2.00c, Pittsburgh is exceptional. A disposition is evidenced by some consumers to close on all options. There is some talk of producers advancing to 2.10c, Pittsburgh, but no indications of definite action have been noticed so far excepting that producers generally refuse contracts. Iron bars have been done at 1.90c to 2.00c, Pittsburgh, but there is a disposition to firm up to 2.00c.

Cold Finished Activity Holds

Pittsburgh, Nov. 11.—No definite reaction has been experienced by finishers of cold-drawn bars in this locality since the election. The buying rate continues about the same but trade sentiment undoubtedly has improved everywhere. Prices are as strong as usual in periods of limited buying and the market is unchanged at 2.70c, f.o.b. Pittsburgh district mills. On less-than-carload quantities, 2.95c is the figure. Operations remain at about 40 to 50 per cent capacity. The price at Newburg, near Cleveland, is 2.75c, which is 2.77c at Cleveland proper, while at Worcester, Mass., on screw stock, it is $3 per ton higher than the Pittsburgh price, or 2.85c.

Future Tonnage Is Wanted

Cleveland, Nov. 11.—No rush of business in steel bars has followed immediately upon the election but the same steady growth in the volume of the market in this territory extending over several months, has been maintained. Buyers, however, display much more confidence in the future and are endeavoring to place contracts at least through the first quarter of 1925. Generally, the mills are unwilling to enter into definite contracts for first quarter but some such commitments have been made at a basis of 2.19c, Cleveland or 2.00c, Pittsburgh. One nut and bolt maker is credited with having placed 2500 tons. Specifications for delivery within the next 45 days or so are more liberal. One rivet manufacturer has released 2500 tons. Numerous orders from 1000 tons down have been closed. Most makers of steel bars are holding to a basis of 2.19c, Cleveland, equivalent to 2.00c, Pittsburgh, but local and Youngstown district mills are understood to have taken some recent tonnage at 2.09c, Cleveland, equivalent to 2.00c, Youngstown.

Daily Aggregate Much Higher

Pittsburgh, Nov. 11.—With daily orders for merchant steel bars aggregating 500 to 1200 tons, sellers here report incoming business about 100 per cent improved over a week or two before election. Business is diversified, coming from cold bar finishers, tool steel works, automobile spring manufacturers and other users, with jobbers sharing to some extent. These all are for prompt shipment since nothing is being done on first quarter bookings. None of this business has been taken below 2.00c and that is the quotable market at present, 1.90c having completely disappeared. On small orders, the tendency is toward higher levels and one order for 150 tons was taken last week at 2.15c, base. One producer turned down an offer to buy 2000 tons at 1.90c.

Refined iron bar sales are growing a trifle but the price situation is unchanged. From 2.80c to 4.50c is quoted.

Hoop-Band Demand Heavy

HOOP PRICES, PAGE 1273

Pittsburgh, Nov. 11.—Operations of the hoop and band departments of hot strip mills in this locality are on practically a 100 per cent basis. Demand for the past month or more has been greater for hoop and band sizes than for the wider strips. One maker states that his 9-inch mill on which hoops and bands are rolled has been operating at full capacity for 60 days. From 2.50c to 2.60c is quoted on hoops although 2.40c to 2.50c represents the market on bands. Narrow hoops of thin gages are quoted at 2.75c to 2.90c and an occasional order comes through at those figures.

Bolt, Nut, Rivet Demand Is on Increase

NUT AND BOLT PRICES, PAGE 1328

Pittsburgh, Nov. 11.—Business has been coming to the makers of nuts and bolts at a much better rate during the past few days and the buying rate has been particularly high since Nov. 4. So far nothing has been done for first quarter but specifications against standing contracts for this quarter are heavy. Books possibly will not be opened for first quarter until Dec. 10. The present average operating rate here is 40 to 50 per cent. Some orders have involved 100 to 500 tons and an occasional order calls for a larger tonnage. Some of the larger orders have come from structural shops or railroad car shops for rivets due to recent car awards. Only one rivet maker located in northern Ohio is offering to take structural rivet business at 2.50c. The market as adhered to by all the makers is 2.60c. The discount on small rivets is 70, 10 and 5 off but an occasional concession is granted by makers wishing to share in the going business.

Order Volume Is Fair

Cleveland, Nov. 11.—Orders for bolts and nuts are of fair size and total a good volume of business. The railroads are furnishing a good part of the demand while the implement makers and jobbers also are taking fairly large quantities. Prices are firm and are being based at Pittsburgh and Chicago.

Rivet demand has improved slightly during the past week but individual tonnages still are of a hand-to-mouth character. The railroads, boiler makers and bridge builders are furnishing a good part of the demand. Prices are firm at 2.60c Cleveland and Pittsburgh, and 2.75c Chicago.

Automotive Industry Inquiring

Chicago, Nov. 11.—Makers of bolts and nuts are heartened by the appearance of inquiries from automotive interests and it is generally believed improved buying is near. Implement manufacturers are fair buyers but have considerable material coming on September specifications. The market is firm in the basis of 60 and 10 off for large machine bolts.

Heavy Pig Iron Buying

(*Continued from Page* 1272)

seller. Producers with furnaces serving the valley district regard the valley price now as firm at $19.50 to $20. The lake furnace price is $20. A Cleveland maker considers $19, valley, as the minimum on basic. Another holds $20, Cleveland furnace, as its minimum.

Heavy Selling at Chicago

Chicago, Nov. 11.—What is described as the biggest buying movement since 1920 apparently has resulted in the sale of 150,000 to 175,000 tons of northern iron here in the last two weeks. The advance of 50 cents to $21, furnace, for

the last quarter as well as the first, has been no damper on recent sales, mostly of foundry grades. They include 12,000 tons to the Kohler Co., 10,000 tons to the American Radiator Co., 5000 tons to the Crane Co., 3000 tons to the Holland Furnace Co., for its Holland and Cedar Rapids plants, 1200 tons to the Link-Belt Co., 1000 tons to Moore Bros. Joliet, and 1000 tons each to one Milwaukee and three Chicago melters. Most of the jobbing foundries in the Chicago district have bought conservatively into the first quarter, their individual tonnage ranging up to 1000 tons. This business placed quietly is running into a large aggregate. Melters are anticipating requirements and are urging speedy shipment. Consumers are adding to their stocks as well as meeting increased demand for casting. The Wisconsin Steel Co. is expected to blow in its third furnace within a week, while another Federal stack is certain to be relighted shortly. Fair sales of southern iron are reported in the Detroit district. The Birmingham minimum is claimed to be $18. Charcoal iron is active, with prospects of an increase of 50 cents to $1 over the present price of $26. The American Steel Foundries placed 500 tons of low phosphorus iron, the Falk Corp., 1000 tons, and the National Brake & Electric Co., 500 tons.

St. Louis Market Active

St. Louis, Nov. 10.—Elimination of uncertainties by the election has had a stimulating effect on pig iron. Purchasing and inquiry have been largest in more than a year, and a stiffening in prices is noted.

Actual sales reported total around 25,000 tons, with inquiries aggregating about half that quantity. The leading local producer disposed of 6000 tons of foundry iron, 1500 of which went to an Illinois car builder. A machinery manufacturer in the district proper raised his recent order from 1000 to 2000 tons, and two local job interests took 600 tons each. Four of the leading stove makers in Belleville covered their wants through first quarter. A local specialty maker purchased 800 tons of foundry, and 500 tons of high silicon was engaged for first quarter by a Kansas City melter. Inquiries include 500 tons by an Evansville user, 300 to 500 tons by a western Missouri interest.

Northern iron sold as high as $21.50, but most of the tonnage from that section brought $21. The $17.50 Birmingham quotation has virtually disappeared, all sales reported being at $18, with efforts to obtain $18.50. A small tonnage of Virginia iron was bought on a basis of $24 furnace. The leading local producer is firm at $21.50 to $22, f.o.b. Granite City.

Southern Market More Active

Birmingham, Ala., Nov. 10.—Buying of pig iron has started and southern furnace interests are selling into first quarter of 1925 at $18.50 for No. 2 foundry and $18 for immediate delivery. Many inquiries are being received. Reduction of surplus stocks is again reported despite large production during the past month.

The Alabama Co., which will soon be taken over by the Sloss-Sheffield Steel & Iron Co. is selling its machine-cast iron at $19 but only one furnace is in blast.

Plate Orders Are Moderate

Baltimore & Ohio Closing 15,000 Tons for Car Repairs—Chicago Tank Work Takes 12,000 Tons—Eastern Mills Seeking Higher Prices

PLATE PRICES, PAGE 1273

Pittsburgh, Nov. 11.—Plate orders and inquiries involving sheared tank quality are exceedingly rare although plates for barge work are in heavy demand. In addition to receiving orders for 11 barges and a steamboat hull for its constituent interest, the Carnegie Steel Co., the American Bridge Co., was awarded six barges for J. K. Davison & Bros., Pittsburgh, about 1000 tons. Approximately 2500 tons are involved in the 19 steel barges awarded the Dravo Contracting Co., Neville Island, Pittsburgh, by the federal engineers, Memphis, Tenn. district. About 1500 tons of steel work was awarded the Riter-Conley Co., Pittsburgh, recently by the Bethlehem Steel Corp. to repair one of its blast furnaces at the Cambria works. Plates in Pittsburgh are at a minimum of 1.90c, although prices made elsewhere are lower due to large unoccupied plate capacity. However, strength is gradually being imparted to plates as well as all other steel products and it is expected that soon everything below 1.90c will have disappeared.

Asking Higher Prices

New York, Nov. 11.—Strong efforts of eastern platemakers to advance plate prices are noted. Today's minimum is 1.70c, base Pittsburgh, with most makers asking 1.75c. These prices have been asked only in the last few days. Some sales have been made at these figures. Previously, some good sized business was done at 1.50c to 1.60c, but the latter prices now are closed or withdrawn in most instances. The Phoenix Utility Co. is inquiring for a gas holder for Birmingham, requiring 2000 tons. The trade here is interested in a Detroit pipe line involving 6000 tons, on which bids will be opened this week, also a Denver line involving 3500 tons and a Flint, Mich., line involving 2500 tons, bids to be opened later this month. Pipe line projects are expected out in Boston and New York in the next month or two.

Now Ask 1.70c

Philadelphia, Nov. 11.—Plate prices are stronger, a good deal of the outstanding business was closed in the past week at 1.50c to 1.60c, Pittsburgh. This included some tonnage for delivery this year, but it is believed all these prices now are closed or withdrawn. A price of 1.70c, Pittsburgh, now seems minimum, with some makers asking 1.75c. There is a general disposition to accept only current tonnage, several requests for contracts being refused. Consumers appear satisfied with the advance, feeling plates are too low compared with other finished products.

Price Situation Still Weak

Cleveland, Nov. 11.—Plate orders show some further improvement but this is not of a marked character and the price situation still is exceedingly soft in this territory. On one lot of several hundred tons of repairs, considerably lower than 1.99c, delivered Cleveland or 1.80c, Pittsburgh, was done. Some less carload business is reported to have been taken at 2.00c, delivered Cleveland. These low prices are ascribed to nearby mills. Most of the mills are not going below 1.80c, Pittsburgh. The Baltimore & Ohio railroad is closing orders for the repair of 2000 cars requiring about 15,000 tons upon which it recently took figures. Some of this business has come to this territory, a Canton interest receiving repairs calling for 1000 to 1500 tons of steel. This material has been placed with Pittsburgh mills. Another ore freighter is under tentative negotiation, making two such craft now pending, requiring about 10,000 tons together.

Tank Work Comes Out

Chicago, Nov. 11.—One maker of steel plates has taken 12,000 tons of tank work in the past few days. Plate business from car builders has decreased in proportion to the lull in freight car buying. Buying of plates has not been so swift as that of bars and while one local maker is well filled for the remainder of the year another has capacity left. Plates are now quoted at 2.10c, Chicago, with one maker disposed to advance to 2.20c, for the first quarter.

Tin Plate Orders

Slow in Developing—Year's Business Close to Normal

TIN PLATE PRICES, PAGE 1273

Pittsburgh, Nov. 11.—Business in tin plate is only about 40 per cent of what it should be for 100 per cent operating schedules. Operations average between 50 and 60 per cent of capacity. This situation, normal for this time of the year, doubtless will prevail until late in December or until books are opened for next quarter. In the November-December period last year makers were enabled to operate practically full, with good business throughout the two closing months of the year. Books are not opened for 1925 business, but some specifications have been furnished by large can makers for material for shipment in January. Hence, production for this year probably will be but little short of normal. It is estimated that when final tabulations are made, consumption for 1924 will be found to be less than 10 per cent under last year's. Much tin plate is being rolled in anticipation of the needs of salmon packers in the Pacific northwest for shipment after the books are opened for next year. Up to late yesterday no orders had been distributed by the Standard Oil Co. of New York or the Standard Oil Co. of New Jersey on requirement of approximately 500,000 base boxes for export and re-export purposes. The tin plate price is unchanged at $5.50 f.o.b. Pittsburgh district mills, per base box of 100 pounds.

Concrete Work Slackens

Smaller Tonnages Awarded and Number of Inquiries Also Easing Off—Recovery Expected in Several Markets—Chicago Most Active

REINFORCING BAR PRICES, PAGE 1273

Chicago, Nov. 11.—Most current reinforcing bar business is being placed about 2.25c, Chicago warehouse. Warehouses generally have informed prospective buyers that after this week 2.50c will be the market. One seller claims to have taken small business at this level. Competition has forced reinforcing bar prices here to an abnormally low figure, but whether 2.50c will hold is to be determined. It is said 2.25c is being bid on a large tonnage of Illinois road work coming up at Springfield tomorrow. Some warehouse interests believe the course of the mill bar price will largely determine the reinforcing market, as the slack period in building is coming on. Another section of the South Water street doubledecking project is out. More than 2000 tons of bars figure in Illinois road work on which bids close Nov. 12 and 26.

Week's Awards Total 500 Tons

Buffalo, Nov. 11.—Demand for reinforcing bars is small. Most road contracts which have been awarded in this district are likely to go over until spring. About 500 tons of material will be used in work awarded within the past week in this vicinity. Bids on a new school here for which 210 tons of material will be required are to be received this week. There is little other new work in immediate prospect. Sellers quote 2.00c to 2.10c, Pittsburgh, for mill shipment and 2.25c for stock shipment.

Few Inquiries And Awards

Pittsburgh, Nov. 11.—Practically nothing is being done in concrete bars. Some specifications on road work contracts are coming through due to the continuance of open weather although the first extended cold snap may cause shipments to be deferred until next spring. The althletic stadium for the University of Pittsburgh will require 1200 tons, but this will not be placed until early next spring. Some state highway commission road contracts were up for consideration again this week but it will not be necessary to buy the bars until early March. In the meantime, several small orders, 10 to 50 tons each, are being placed and a few such inquiries are coming out for school, industrial, garage and other buildings. The price is unchanged at 2.00c, f.o.b. Pittsburgh district mills.

Number of Sales Increasing

Cleveland, Nov. 11.—The number of sales in reinforcing concrete bars is increasing, but tonnages of individual lots still remain small. The largest award in this district during the past week involved about 50 tons. Many projects are pending and action is expected to materialize on some of these shortly. New billet bars are easy at 2.09c to 2.19c, Cleveland, equivalent to 1.90c to 2.00c, Pittsburgh. No tonnage is out to test either these quotations or that on rail steel bars of 1.90c, mill. An attractive tonnage possibly could do 1.80c, on rail steel. New billet bars out of stock are going at 2.25c, Pittsburgh, with 3.10c, Cleveland warehouse, being done by one local interest.

Seasonal Decline Smaller

Cincinnati, Nov. 11.—Reinforcing bar business is holding up well and showing much less than the usual seasonal decline. Small jobs of from 50 to 100 tons are numerous, while projects of 200 tons or more are less frequent. The National Cash Register Co., Dayton, O., is preparing plans for the construction of an addition to its plant which will require several hundred tons. The tone of the market is much healthier since the election and sellers are of the opinion that a satisfactory volume of business will be forthcoming for the remainder of this year. Bar interests assert that 3.30c, Cincinnati, warehouse, continues the governing price.

CONCRETE CONTRACTS PLACED

Awards this week	**3,235 tons**
Awards last week	**4,615 tons**
Awards two weeks ago	**2,580 tons**

800 tons, Jewelers' building, Chicago, to the Kalman Steel Co. on optional basis.

700 tons, Eitel building, Chicago, to Olney J. Dean & Co. Hegeman-Harris Co., 400 North Michigan avenue, Chicago, general contractor.

700 tons, addition to Morrison hotel, Chicago, to the American System of Reinforcing. Holabird & Roche, 104 South Michigan avenue, Chicago, architects.

400 tons, sewage disposal plant, Elgin, Ill., to the Concrete Steel Co.

385 tons, to Pacific Coast Steel Co., for city of Seattle light plant warehouse; Hendrickson & Ahlstrom, Seaboard Bldg., Seattle, general contractors.

250 tons, Standard club, Chicago, to Olney J. Dean & Co. Albert Kahn, Detroit, architect.

Unstated tonnage, Canadian Pacific hotel, Lake Louise, to Manitoba Steel & Iron Co., Winnipeg; Carter, Halls, Aldinger Co., Vancouver and Winnipeg, general contractors.

CONCRETE CONTRACTS PENDING

450 tons, work for Dade county commissioners, Hobart Crabtree, county engineer, Miami, Fla.; bids in Nov. 12.

300 tons, Kinzie building, Chicago, David Saul Klafter, 64 West Randolph street, Chicago, architect. Previously noted, but buying deferred until January.

300 tons, section No. 1 of South Water street, double decking, Chicago. General contract to M. E. White Co., 1600 Cortland street, Chicago.

220 tons, Twelfth avenue south bridge approach, Seattle; bids Nov. 21.

Tonnage unstated, theater, store and apartment building for National Theaters Corp., 7542 Cottage Grove avenue, Chicago. Plans shortly by John Eberson, 212 East Superior street, Chicago.

Tonnage unstated, theater for Beacon Theaters Corp., Chicago. Plans by Walter W. Ahlschlager, 65 East Huron street, Chicago.

Tonnage unstated, 14-story apartment building for Wellington Arms Building Corp., Chicago. Plans by Hooper & Janusch, 201 East Ontario street, Chicago.

Tonnage unstated, 8 story addition to building at 910 West Washington street, Chicago. Plans shortly by Alfred S. Alschuler, 28 East Jackson street, Chicago.

Tonnage unstated, enlargement of University of Chicago football stadium, Chicago. A. A. Stagg, athletic director, University of Chicago, Ellis avenue and Fifty-eighth street, Chicago.

Unstated tonnage, improvement of Superior Portland Cement Co.; C. L. Wagner, plant superintendent, Concrete, Wash.; bids Nov. 13.

James J. Bowers has been appointed receiver of the Brendonne Corp., radio manufacturer, with a plant at Rockaway, N. Y., and offices in Orange, N. J. Liabilities are fixed at $20,000.

Standard Pipe

Specifications From Jobbers Are Good —Cast Iron Buying Slackens

PIPE PRICES, PAGE 1273 AND 1328

Pittsburgh, Nov. 11.—Specifications from jobbers of standard full weight merchant pipe still are of pleasing character and the aggregate enables pipe makers to operate at 60 to 70 per cent of capacity. An occasional order for oil country goods is received although this business is rather limited at present, usually involving one to three carloads of drill pipe, casing or line pipe. Due to the statistical position of crude oil improving, that is, that production has been curtailed until premiums are being paid, portending oil price advances and encouraging drilling, it is expected that more buying of oil country goods will be done within the next month. Larger purchases probably will be deferred until late winter or early spring. A few inquiries are developing in the southwestern oil territories where 50 to 100 miles each of 4-inch line pipe, or similarly popular sizes, are needed. So far as can be learned, the 104-mile line from Craig, Colo., to Parco, Wyo., has not been placed.

Demand for locomotive tubes is growing measurably and prices are stronger. There has been no change in the published schedule, but while as low as 12½ cents was quoted on 2-inch, 11-gage locomotive tubes a few weeks ago, the minimum now is 14 cents; the published price is 16 cents on that size. Commercial tube orders likewise are increasing but buyers still are able to receive concessions and hold out for extra discounts, usually obtaining three to five extra 5's.

New York Market Featureless

New York, Nov. 11.—The local cast iron pipe market again is featureless. Buying is being fairly well maintained, but there appears to be no large tonnage, and prices as a whole, are about as they have been over the past several weeks.

Approaching $43, Base

Chicago, Nov. 11.—Cast iron pipe is reported to be firmer in keeping with the advancing southern pig iron market and the range at Chicago now on 6-inch pipe and over is $50.20 to $51.20, with the usual $4 differential for 4-inch pipe. Advertised lettings have been few, the largest being 800 tons at Clawson, Mich., which the National Cast Iron Pipe Co. took. Detroit is expected to close this week on its 2000 tons. Considerable business is expected to be placed in December by various Ohio counties.

Lettings Still Steady

Birmingham, Ala., Nov. 10.—Lettings for cast iron pipe, gas and water pipe, still are steady and the volume of business is good. No readjustment of prices has been made in the past few weeks, a base of $42 to $43 being noted on 6-inch and over and $46 to $47 on the 4-inch and over is being maintained

steadily. Plants in this district are operating almost to capacity.

CAST IRON PIPE PLACED

800 tons, Clawson, Mich., to the National Cast Iron Pipe Co.
300 tons, Higginsville, Mo., to Conner Contracting Co., Kansas City, Mo.
150 tons, Madison, Wis., to the National Cast Iron Pipe Co.
110 tons, Hammond, Ind., to the United States Cast Iron Pipe & Foundry Co.

CAST IRON PIPE PENDING

200 tons, 8-inch pipe, Park Falls, Wis.; bids Nov. 17.
7000 feet of 8-inch,, 2400 feet of 6-inch, 1050 feet of 2-inch galvanized iron pipe, 18 hydrants and other supplies for Everett Pulp & Paper Co., Everett, Wash.; bids Nov. 12; J. A. Wyatt, engineer.
3400 feet of 6-inch cast iron water pipe for Park Rose water district, Portland, Ore.; bids Nov. 7.
Unstated tonnage, city of Vancouver, B. C., for cast iron water pipe estimated to cost $14,000.
Unstated tonnage, city of Tacoma, Edison boulevard improvement 32 and 36-inch steel pipe to cost $28,000, also $11,000 for a centrifugal pump.

Wire Buying Gains

Carload Orders More Frequent and Competition Brings Many Prices

WIRE PRICES, PAGE 1273

Pittsburgh, Nov. 11.—Orders for straight or mixed carloads of wire and nails while not frequent are slightly more numerous than they were several weeks ago. These specifications are far from satisfying production capacity since 50 to 60 per cent is the average operating rate here. Ironton, O., mills are naming the same prices there as are quoted by Pittsburgh and Cleveland mills and other makers are equalizing freight wherever necessary to share in orders they particularly desire. Prices here are unchanged at 2.50c and 2.75c f.o.b. Pittsburgh mills on plain wire and wire nails, respectively. Demand is not heavy for cement-coated nails and the desire to share in going business has created some low figures. However, from 2.10c to 2.15c is considered the quotable market.

Market Is Irregular

Chicago, Nov. 11.—Irregularities continue to be reported in western wire and nail prices but the larger producers believe increasing business will iron out the variances. The Anderson, Ind., base of $1 over Pittsburgh-Cleveland sees to be the chief stumbling block at this time. Demand from jobbing and manufacturing lines has picked up perceptibly in the past week and the outlook is the best in several months. The leading maker's western prices are based upon 2.60c, Joliet and Waukegan for plain wire and 2.85c for wire nails.

Foundrymen To Meet

Pittsburgh, Nov. 11.—Announcement has been made that the next meeting of the Pittsburgh Foundrymen's association will be held Monday evening, Nov. 17, at the General Forbes hotel. The program will consist of the showing of motion pictures describing the centrifugal method of manufacturing cast iron pipe as used by the United States Cast Iron Pipe Co.

Sheet Prices Are Stronger

Mills Disinclined To Accept First Quarter Business at Present Levels—Independent Maker Makes $2 and $3 Advance

SHEET PRICES, PAGE 1273

Youngstown, O. Nov. 11.—A more settled feeling is noted in the sheet market here. Many consumers anticipating tighter market conditions in the near future are seeking protection on tonnages of black at 3.40c, but their efforts are being repelled by producers who consider the market on this grade firm at a price equivalent to 3.50c, Pittsburgh. At the beginning of this week a southern Ohio sheet producer advanced its prices $2 a ton on galvanized and blue annealed and $3 a ton on black quoting galvanized at an equivalent Pittsburgh price of 4.70c, blue annealed 2.70c, and black 3.65c. Because of the unprofitable operation of sheets mills during the last quarter little doubt exists that prices in this district will be on a higher basis before the end of this week. Blue annealed now is quotable at a price equivalent to 2.60c, black at 3.50c and galvanized at 4.60c. While some inquiry for first quarter tonnages is being made producers are not quoting, preferring to have their books clear in event a brisk demand develops. Some attractive tonnages of black have been promised producers here but so far there has been no concerted effort to seek placements. Demand for high grade sheets has undergone little change over the week. While orders are coming out the tonnage involved is not large. Not much interest in first quarter tonnage is apparent. Full finished sheets continue quotable at a price equivalent to 4.60c Pittsburgh, although there is some likelihood of an advance. Second grade automobile sheets are bringing $70 a ton and stocks of this grade are scarce.

Prices Are Unchanged

Philadelphia, Nov. 11.—Intentions to advance sheet prices are indicated by expressions of producers generally. Consumers are observing the market carefully. Some of the best informed buyers feel that sentiment, alone is not sufficient, and advances must be based on the law of supply and demand. They believe demand has not increased sufficiently to support materially higher prices. Prices on sales in the past week were unchanged. Black sheets are 3.35c to 3.50c, Pittsburgh; blue annealed 2.60c to 2.70c and galvanized 4.50c to 4.60c.

Activity More Pronounced

Pittsburgh, Nov. 11.—Considerable impetus has been given to the sheet market since the election. Buyers are trying to close at present figures for their first quarter requirements, but makers are disinclined to accept business for shipment that far ahead at present levels. One independent sheet maker last Saturday inaugurated an advance of $3 per ton on black, going to 3.65c and $2 per ton in galvanized, going to 4.70c, but as yet these prices are not general. At any rate, price cutting appears to have stopped for the time being and black sheets are quoted at a flat rate of 3.50c, f.o.b. Pittsburgh district mills; galvanized at 4.60c; blue annealed at 2.70c, with full-finished automobile sheets unchanged at 4.60c. Operations are the same as they had been, somewhere between 65 and 70 per cent on the average, but shipments in November give every promise of exceeding October's which in the case of one or two prominent producers were greater than in any month since last May. Several jobbers are endeavoring to place first quarter tonnages involving up to 5000 tons at a time of blue annealed, black and galvanized sheets, and a few manufacturers want as much as 12,000 or 15,000 tons of these grades at today's prices. For the time being these offered tonnages are being turned down. Protections are out on approximately 15,000 tons of blue annealed and galvanized sheets for railroad car awards and repairs which probably will be closed up this week. Several negotiations are under way for first quarter supplies of full-finished. Books are not opened for that period. Producers believe that within a week or two the market will be stronger.

Interest Not So Keen

Chicago, Nov. 11.—Western sheet mills are booking a good volume of business but the activity displayed by users of plates, shapes and bars is not paralleled in sheets. Capacity is available over the remainder of the year although order books are lengthening slightly. One valley maker is understood to have raised his quotations $2 a ton but other western delivered prices figure back to 2.80c, base Gary and Indiana Harbor, for blue annealed, 3.60c for black and 4.70c for galvanized, with Chicago delivered prices $1 a ton higher.

Strip Bookings Growing

STRIP PRICES, PAGE 1273

Pittsburgh, Nov. 11.—New business in hot and cold-rolled strip steel is coming in faster than for a long period. Orders are larger and more numerous, and one prominent maker here finds business since election trebled that of the preceding week. Instructions have been issued to branch offices to withdraw quotations for while no definite advances have been made undoubtedly the price structure possesses increased strength and makers are hopeful that the period of drastic price cutting on hot strips is over. They now have a minimum of 2.40c on hot strips while some will endeavor shortly to obtain 2.50c. Cold strips are firm at 4.00c, f.o.b. Pittsburgh district mills. Operations average 60 per cent of capacity in this region.

Easier at New York

New York, Nov. 11.—Cold rolled strip in this market is easier, with quotations ranging from 3.60c to 3.65c, Pittsburgh base. On small lots prices are higher than this range.

Shapes Show No Letup

Demand for Building and Bridgework Unceasing—About 100,000 Tons Active at Philadelphia—Hotel at Chicago Takes 6470 Tons

STRUCTURAL SHAPE PRICES, PAGE 1273

New York, Nov. 11.—Structural buying the past week fell off somewhat from the preceding week, but the market as a whole is lively. Several sizable jobs are expected to be placed within the next few days, and inquiry is broadening rapidly. Two interesting industrial awards of late are 1700 tons for a plant addition for the United States Cast Iron Pipe & Foundry Co., Burlington, N. J., and 1100 tons for a coke plant at Troy, N. Y. While prices appear to be tending upward, no change in actual market levels is yet noted. Plain shapes may be quoted at the equivalent of 1.80c to 2.00c, Pittsburgh.

Big Buying Under Way

Philadelphia, Nov. 11.—A big buying movement of structural shapes is underway here, with probably over 100,000 tons being involved. Bethlehem Steel Co. is the heaviest participant in the going tonnage. The large percentage of this business was sold at 1.65c, Pittsburgh or 1.97c Philadelphia which figure now seems to have disappeared. Although 1.70c, Pittsburgh, still is appearing, it is difficult to shade 1.80c. The market now is not being tested keenly.

Only Small Lots Moving

Cleveland, Nov. 11.—Only small lots of structural shapes were placed in this district last week. Interest in the local market centers in the 8000-ton lot required for the new Ohio Bell Telephone Co. building, bids on which go in today. Estimates on probable action are unsettled, one interest claiming plans to be only preliminary while another thinks the tonnage will be placed immediately. Exclusive of the Bell Telephone tonnage more than 10,000 tons actively is pending. Plain material is stiffening to 2.19c, Cleveland, or 2.00c, Pittsburgh, but 2.09c, Cleveland, equivalent to 1.90c, Pittsburgh, has not disappeared from this market. Several good sized lots for stock were booked by one maker during the past week at 2.19c, Cleveland. Less hesitancy is noted on the part of buyers, with many willing to pay 2.19c to get tonnage at the present price level.

Mills Firm; Fabricators Weak

Pittsburgh, Nov. 11.—Structural shape mills show a decided tendency to stiffen their prices and are not inclined to go below 2.00c to obtain attractive orders. Fabricators still sacrifice profits as is indicated by some of the bids made on material fabricated and erected. Fabricated prices are out of line with the plain material minimum of 2.00c, which is being firmly maintained by each of the several mills here. One fabricator who had been testing out the market recently but who is receiving material on old contracts, states that he believes the market still is weak at 2.00c; that is, if an attractive tonnage would develop the 1.90c figure could be obtained, but the mills all disclaim any such possibility. Several projects are scheduled for early spring placement, including a 52-story building for the University of Pittsburgh, which it is estimated will require about 5000 tons although plans are not out. The Taylor Allderdice high school, Squirrel Hill, Pittsburgh, to be built next spring, will require in the neighborhood of 2000 tons.

Awards Better; Inquiry Dull

Cincinnati, Nov. 11.—Awards of structural shape contracts in this territory gained volume the past week, although activity was not widespread. Inquiries were limited and despite increased awards the betterment noted was slight. Few projects calling for large tonnages are pending in the city most jobs being in the surrounding territory. The 1100 tons of the Louisville & Nashville railroad for bridgework has been divided between Fort Pitt Bridge works and McClintic-Marshall Co. The J. D. Adams Co., Indianapolis is reported to have bought 1500 tons of shapes, plates and bars for immediate shipment. Plain material prices continue steady at 2.00c, base Pittsburgh.

Awards Unseasonably Large

Chicago, Nov. 11.—The placing of 6600 tons of structurals for the Eitel building, Chicago, and 1850 tons for a foundry at Mt. Vernon, Ill., is expected to be followed within a few days by the 15,000 tons for the new Chicago commission row and between 8000 and 10,000 tons for the Jeweler's building, Chicago. One maker of plain material placed 40,000 tons on its books last week. Advancing prices have had a share in bringing many projects to a head. Makers of plain material assert that 2.10c, Chicago, is their minimum and one interest is considering an advance to 2.20c on first quarter business. Some last quarter capacity still is available in this district but makers are not as active as they were in pushing sales in view of the stiffer price tendency.

STRUCTURAL CONTRACTS PLACED

Building awards this week..... 29,359 tons
Building awards last week .....27,681 tons
Building awards two weeks ago.... 33,242 tons

6470 tons, Eitel hotel, theater, and office building, Chicago, to the Morava Construction Co.

2500 tons, mostly plates, 19 steel barges for the Federal Engineers, Memphis, Tenn., to the Dravo Contracting Co.

1850 tons, foundry for the Mt. Vernon Car Mfg. Co., Mt. Vernon, Ill., to McClintic-Marshall Co.

1700 tons, plant addition for the United States Cast Iron Pipe & Foundry Co., Burlington, N. J., to the American Bridge Co.

1500 tons, steel work, mostly plates, blast furnace repairs at Cambria works, Bethlehem Steel Corp., to the Riter-Conley Co.

1500 tons, 14-story apartment for the Backer Construction Co., 347 Fifth avenue, New York, to the Hay Foundry & Iron Works.

1100 tons, coke plant, Troy, N. Y., awarded through the Foundation Co., 120 Liberty street, New York, to McClintic-Marshall Co.

1100 tons, bridgework for Louisville & Nashville railroad, to Fort Pitt Bridge Works and McClintic-Marshall Co.

1000 tons, six barges for J. K. Davison & Bros., Pittsburgh, to the American Bridge Co.

1000 tons, office building for Consolidated Gas & Light Co., Bronx, N. Y., to Levering & Garrigues Co.

1000 tons, hotel, Twenty-first street and Lexington avenue, New York; to the Lehigh Structural Steel Co.

1000 tons, apartment Ninety-fourth street and Lexington avenue, New York, to Harris Structural Steel Co.

1000 tons, schools No. 32 and 39, New York, each taking 500 tons, to Harris Structural Steel Co.

900 tons, apartment on East Seventy-second street, New York, to A. E. Norton, Inc.

704 tons, highway bridge over Platte river, Yutan, Neb., to the Omaha Steel Works.

700 tons, theater, Youngstown, O., to McClintic-Marshall Co.

600 tons, manufacturing plant and crane runway for Peerless Portland Cement Co., Detroit, to Fort Pitt Bridge Works.

600 tons, B'nai Jeshurun tabernacle, Cleveland, to J. E. Moss Iron Works.

550 tons, can building, for the York Mfg. Co., York, Pa., to McClintic-Marshall Co.

500 tons, high school, Asbury Park, N. J., reaward to Kellogg Structural Steel Co.

500 tons, office building near the Parliament buildings, Toronto, Ont., to the Burlington Steel Co., Hamilton, Ont.

450 tons, warehouse for the Chicago civic opera company, Chicago, to the American Bridge Co.

450 tons, Masonic temple at Waterloo, Iowa, to Rock Island Bridge & Iron Works.

450 tons, School 128, Brooklyn, to the Easton Structural Steel Co.; owing to typographical error this was previously reported as going to the Eastern Steel Co.

405 tons, warehouse for Kieckhefer Container Co., Milwaukee, to the Milwaukee Bridge Co.

400 tons, Polstein apartment, Seventy-fourth street and Lexington avenue, New York, to Hinkle Iron Co.

350 tons, work for Robert Gair Co., Brooklyn, N. Y., to the Austin Co., for fabrication and general construction.

300 tons, garage, Kings street, New York; to Levering & Garrigues Co.

300 tons, Pennsylvania railroad bridge, Fort Wayne, Ind., to the Bethlehem Steel Corp.

300 tons, miscellaneous work for the New York Central railroad, to the Jones & Laughlin Steel Corp.

250 tons, three miscellaneous projects in Cleveland territory, to Fort Pitt Bridge Works.

250 tons, apartment building for Wellington Arms Building Corp., Chicago, to the Duffin Iron Works.

240 tons, chapel for Sister of Charity, Chicago, to unstated fabricator.

230 tons, Milwaukee branch of Standard Sanitary Mfg. Co., Pittsburgh, to Lakeside Bridge & Steel Co.

200 tons, warehouse, in West 100th street, New York, to McClintic-Marshall Co.

200 tons, storehouse for the H. P. Simpson Co., Cambridge, Mass., to the New England Structural Co.

200 tons, apartment building at Milwaukee, to Worden-Allen Co.

175 tons, dredge hull for Dixie Sand & Gravel Co., Chattanooga, Tenn., to Milwaukee Bridge Co.

160 tons, Houde Engineering Co., Buffalo, to Kellogg Structural Steel Co.

150 tons, addition to boiler house for the Packard Motor Car Co., Detroit, to Fort Pitt Bridge Works.

150 tons, Nash Motors Co. addition, Kenosha, Wis., to Worden-Allen Co.

150 tons, addition for Wadhams Oil Co., Milwaukee, to Lakeside Bridge & Steel Co.

150 tons, storehouse, Howard street, Boston, to New England Structural Co. W. A. and H. A. Root, general contractors.

150 tons, plant addition, Cambridge, Mass., to the Boston Structural Co.

150 tons, Bergman Hardware Co., Buffalo, to R. S. McMannus Steel Construction Co.

125 tons, church in Newtonville, Mass., to New England Structural Co. Sawyer Construction Co., general contractor.

100 tons, work to be fabricated by the Austin Co., including 65 tons for building for Folberth Auto Specification Co., 7920 Lake avenue, Cleveland.

100 tons, miscellaneous work in East, to Fort Pitt Bridge Works, including 50 tons for Federal Metal Bed Co., Hoboken, N. J., for which H. K. Ferguson Co. is general contractor.

100 tons, for Pacific Coast Steel Co. plant extension to Wallace Equipment Co.

100 tons, city of Seattle, light department warehouse, to Wallace Equipment Co, Seattle; Hendrickson-Ahlstrom Co., general contractors.

Unstated tonnage, Canadian Pacific hotel at Lake Louise, to Dominion Bridge Co., Winnipeg, Canada; Carter, Halls, Aldingers Co., Ltd., Vancouver and Winnipeg, general contractors.

STRUCTURAL CONTRACTS PENDING

8000 tons, Savoy hotel, Fifth avenue, New

York; formal bids asked. Todd, Robertson & Todd, 347 Madison avenue, New York, general contractors.

5000 tons, 52-story building, University of Pittsburgh, Pittsburgh; plans to come out next spring.

3200 tons, Alaska Northern railway, bridgework; American Bridge Co. low bidder.

2500 tons, stadium at East St. Louis, Ill.; bids in.

2200 tons, McCutcheon's Store building, Forty-ninth street and Fifth avenue, New York; pending.

2000 tons, four schools, each involving 500 tons, New York; on three of these schools, No. 116, Manhattan, and No. 40 and 41, Staten Island, bids will close Nov. 25, and on one, No. 207, Brooklyn, Nov. 18; bids on Nos. 68 and 72 in the Bronx, previously noted as pending, were closed Nov. 11.

2000 tons, Taylor-Allderdice high school, Squirrel Hill, Pittsburgh; plans to come out next spring.

2000 tons, physics and chemistry buildings, Columbia university, New York, each building requiring 1000 tons; pending.

2000 to 2500 tons, viaduct over Milwaukee river, between Holton and Van Buren streets, Milwaukee; R. E. Stoelting, commissioner of public work. Plans out about Jan. 1.

1600 tons, Seamen's institute, New York; specifications issued and then withdrawn pending further changes.

1400 to 1500 tons, theater, Buffalo, N. Y.; pending.

1200 tons, Erie railroad bridge, Paterson, N. J.; bids asked.

1000 tons, building for Albrecht Wholesale Grocery interest, Akron, O.; bids in.

900 tons, Polstein apartment, Park avenue and Seventy-fourth street, New York; pending.

800 tons, riveted or lock bar water pipe for First avenue south improvement, Seattle, Wash; bids Nov. 7.

800 tons, Schwartz & Gross apartment, 38 East Eighty-fifth street, New York, bids asked.

800 tons, People's hospital, East Fifteenth street, New York; bids out soon. John Scheier, Fifty-ninth street, New York, is architect.

700 tons, warehouse for B. H. Voskamp & Sons., Inc., Twenty-fourth street and the Allegheny Valley railroad, Pittsburgh; bids filed Nov. 7.

700 tons, loft building at 127-9 West Twenty-eighth street, New York; pending.

600 tons, apartment on Central Park South, for Harry Schiff, Hotel Monterey, New York; pending.

522 tons, Twelfth avenue south, bridge approach, Seattle; bids Nov. 21.

500 tons, hotel at Dallas, Tex.; bids in.

500 tons, department store addition, Hartford, Conn.; bids asked.

500 to 600 tons, steel warehouse building, Buffalo, N. Y.; pending.

500 tons, Kidansky & Levy apartment, East Ninety-sixth street, New York; pending.

500 tons, Harriman National Bank building, 523 Fifth avenue, New York; preliminary plans completed.

500 tons, new bridge in Pierce county, Wash.; bids soon.

400 to 500 tons, 360-foot span bridge in Pierce county, Wash.; pending.

300 tons, coal house for the Narragansett Light & Power Co., Providence, R. I.; bids in.

292 tons, work for Dade county commissioners, Hobart Crabtree, county engineer, Miami, Fla.; bids in Nov. 12.

250 tons, Eggleston Square theater, Boston; bids in. Now considering concrete construction.

200 tons, highway bridge for the State Highway commission, New Jersey; bids asked.

200 tons highway bridge, Kimbles, Pa., bids being received by the Phoenix Utility Co., 71 Broadway, New York.

175 tons, Stuck river span, King county, Wash.; plans approved, bids in near future; Don Evans, county engineer, Seattle.

175 tons, 270-foot steel span over Stuck river, King county, Wash.; pending.

150 tons, first unit of building requiring 600 tons for Upson works of Bourne-Fuller Co., Cleveland, general contract awarded H. K. Ferguson Co.

125 tons, Childs' office building, Tremont street, Boston; preliminary plans out.

Tonnage unstated, 20-story office building at Madison and Wells streets, Chicago, for J. L. Kesner, 5 North Wabash avenue, Chicago. Revival of project for which Mundie & Jensen, 39 South La Salle street, drew plans two years ago.

Unstated tonnage, 14 towers in aerial tramline for Superior Portland Cement Co.'s plant, at Concrete, Wash.; C. L. Wagner, plant superintendent, Concrete, Wash.; bids Nov. 13.

More Cars Being Placed

Norfolk & Western Closes on 3000 Cars—Baltimore & Ohio To Repair 2000—Chesapeake & Ohio Places 30,000 Tons of Rails

RAILROAD TRACK MATERIAL PRICES, PAGE 1273

New York, Nov. 11.—Car awards for October were not as large as expected in some quarters earlier in the month, the total aggregating 4885 freight cars, the smallest since July, when 886 cars were placed. The total for the first 10 months is 113,230 cars, or approximately 10,000 cars more than were placed during the 12 months of last year. Following is a comparative statement:

Total for 10 months	113,230
October	4,885
September	27,630
August	5,980
July	886
June	438
May	511
April	10,250
March	13,150
February	41,350
January, 1924	8,150
1923 total	103,487

Domestic locomotive buying was the best in seven months, total orders aggregating 132. Buying so far this year is substantially behind that of the corresponding period of 1923. Locomotive buying is featured by the award of five locomotives for the Southern railway to the American Locomotive Co. The Peoria-Pekin Union has ordered three switch engines from the Baldwin Locomotive Works, and the Hydraulic Press Brick Co., St. Louis, one from the same company.

In addition to inquiring for 3000 car ends and under car repairs on 2000 hoppers, the Baltimore & Ohio railroad has placed 16,000 tons of steel among several producers for repairs to 2000 cars to be done largely in its own shops. The largest award of the week is that of the Norfolk & Western for 3000 hopper cars.

Seek Equipment Purchase Approval

Washington, Nov. 11.—The Missouri Pacific railroad has applied to the interstate commerce commission for authority to issue $3,900,000 of equipment trust certificates to be used in the purchase of 50 locomotives, 1000 freight cars and other rolling stock at a total cost of $5,212,200. The Texas & Pacific railroad also has asked the commission for authority to issue $3,285,000 of equipment trust certificates to be used in purchasing 2000 freight cars and other rolling stock at a total cost of $4,395,000.

Orders Grow More Numerous

Pittsburgh, Nov. 11.—Orders for 25 to 50 tons of light rails are noted with an occasional specification involving up to 150 or 200 tons. Because rail steel light rail manufacturers are becoming somewhat dissatisfied with low prices billet-rail makers are sharing more extensively in the going business. The latter still are quoted at 1.80c to 1.90c and state that before long the 1.80c figure will disappear. Rail-steel light rails are quoted at 1.60c to 1.70c.

Track fastenings bid fair to advance from $2 to $3 per ton, and one interest already has inaugurated a 2.80c minimum on standard spikes and a 3.15c minimum on small spikes. Others still quote 2.70c and 3.00c so that the ranges of quotations in both grades continue in force. On tie plates, 2.30c still can be done, and 4.00c is the ruling quotation on track bolts. Several railroads are in the market, including the Missouri Pacific and the Wabash railroads, and the New York Central is endeavoring to place its first half requirements, taking bids until Nov. 17.

Expect Fastening Business

Chicago, Nov. 11.—Chicago district makers of track fastenings expect western roads to close shortly on some good-size inquiries for track fastenings, while some roads not yet in the market are expected to enter. One maker has taken 9000 kegs of spikes and bolts and 7000 tons of angle bars in the past few days.

The Chesapeake & Ohio railroad has placed 12,000 tons of rails each with Illinois Steel Co. and Inland Steel Co. and 6000 tons with the Bethlehem Steel Co. The Hocking Valley subsidiary of the Chesapeake & Ohio is understood to have placed 5000 tons of rails with the Carnegie Steel Co. The Northern Pacific railroad has placed 15,750 tons with Illinois and is expected to place some with Inland. The International & Great Northern railroad is reported to have placed 7500 tons with the Tennessee Coal, Iron & Railroad Co. Rail purchases by the Santa Fe, Burlington, Chicago, Alton, Monon and Chicago & North Western railroads are looked for shortly.

New business in cars has been small, the largest inquiry being that of the Central of Georgia for 500 box cars and that of the Southern railway for 1000 center sills.

CAR ORDERS PLACED

Baltimore & Ohio, 2000 car repairs, to own shops; 16,000 tons steel bought for repairs.

Caddo Central Oil & Refining Co., New York, one 8050-gallon tank car, to the Standard Tank Car Co.

Conley Tank Line, Pittsburgh, six insulated 8050-gallon tank cars, to the Standard Tank Car Co.

Great Northern railroad, 40 air dump cars, to Pressed Steel Car Co.

Gulf, Texas & Western, gasoline motor baggage car, to the J. G. Brill Co.

Misko Refineries, Laredo, Tex., two triple compartment, 8050-gallon tank cars, to the Standard Tank Car Co.

Missouri Pacific railroad, repairs to 300 cars, to the American Car & Foundry Co.

Norfolk & Western, 3000 gondolas, 1000 to Pressed Steel Car Co., 1000 to Newport News Shipbuilding & Dry Dock Co., and 1000 to Ralston Steel Car Co.

Southern railway, 1000 underframes, to Virginia Bridge & Iron Co.

St. Louis-San Francisco, 400 underframes, to the Tennessee Coal, Iron & Railroad Co.

Sun Co., Philadelphia, seven compartment car tanks, to the Standard Tank Car Co.

United States Rubber Co., three tank cars, to American Car & Foundry Co.

CAR ORDERS PENDING

Baltimore & Ohio, 3000 car ends and under car repairs to 2000 hopper cars, bids asked; reported this company contemplates the repair of 6000 hopper cars in its own shops.

Central of Georgia, 500 box, 6 passenger cars and 10 underframes; pending.

Elgin, Joliet & Eastern, 500 underframes; pending.

Great Northern, 1000 underframes; bids asked.

South African railways, 83 coach underframes and 80 coach bodies, specifications may be obtained through the general manager of railways, Johannesburg, South Africa.

Nonferrous Metal Markets

Prices of the Week

	Copper—Electro delivered	Copper—Lake delivered	Copper—Casting refinery	Spot Tin, N. Y. Straits	New York Lead	St. Louis Lead	St. Louis Zinc	Aluminum 98-99%	Antimony Spot	Nickel Ingot
Nov. 5	13.62½	13.75	13.12½	53.75	9.00	8.85	6.60	27.00	12.25	29.00
Nov. 6	13.75	13.87½	13.25	53.37½	9.00	8.85	6.60	27.00	12.50	29.00
Nov. 7	13.75	13.87½	13.25	53.75	9.00	8.85	6.62½	27.00	13.00	29.00
Nov. 10	13.87½	13.87½	13.25	54.25	9.25	8.85	6.70	27.00	14.00	29.00
Nov. 11	13.87½	14.00	13.30	54.37½	9.00	8.85	6.75	27.00	14.50	29.00

NEW YORK, Nov. 11.—The outcome of the national elections was greeted with a burst of enthusiasm in the metal markets here and abroad, as well as in the financial markets and foreign exchange markets. On Nov. 5 domestic buyers placed a heavy tonnage of copper, probably upward of 20,000 000 pounds for delivery the next two months. All through the week buying was good, not only of copper, but also of zinc, lead, antimony and other metals. The bull movement in metals which had its inception some weeks ago after the third party scare was passed and assurance renewed that political stability would continue, gained momentum. Higher sterling exchange rates further accelerated the rise in foreign equivalents and facilitated export purchases.

Copper—Electrolytic copper advanced ¼ cent in the week to Nov. 11. Producers have been well sold and therefore have been content to book moderate tonnages, then push their prices up another peg. For a week export buying was relatively slow, when the rise in sterling exchange put London price equivalents up and buying was renewed for British account. Some copper sold as high as 14.00c today.

Wire—So much business has been done in wire and cable the past two weeks that leading mills have fallen 10 days to two weeks further behind in deliveries. Deliveries on bare copper wire now are being promised in about seven or eight weeks. Mills have been operating 80 to 85 per cent of capacity. They average 10 weeks to three months' business on books.

Copper and brass rolled products—The American Brass Co. announced an advance of ¼ cent on products Nov. 5 and again Nov. 11. The rising copper market and upward tendency in rolled products has stimulated buying of rolled products and covering orders for copper. Base prices as of Nov. 10 were on the basis of 13.75c ingot copper.

Zinc—European purchases of slab zinc have continued in heavy volume, with all the principal foreign countries as buyers. Domestic consumers also have bought good tonnages. Authorities estimate present European requirements of American zinc will average 7500 tons a month against 5000 tons earlier in the year. The price of slab zinc increased another 15 points the past week to 6.75c, East St. Louis. High grade zinc is quoted 8.25c to 8.75c, delivered. Brass special is commanding 2½ to 5 points over prime western. The Nov. 1 statistics of the American Zinc institute showed a further decrease in smelter stocks during October of 7268 tons, with export shipments amounting to 8299 tons.

Lead—The lead market has continued an irregular and nominal affair, due to the efforts of the larger factors in the industry to check the runaway market. While outside sellers have quoted up to 9.25c, New York and made sales at 9.12½c, New York, the largest factor in the East has done some business at 8.65c, New York. Similarly, in the West, sales have been made at 8.85c, whereas a leading producer has quoted December out at 8.40c. European prices have risen steadily.

Tin—Tin prices have risen above 54c on the tide of rising sterling exchange, coupled with the bull operations of London factors. American consumers have maintained a rather cautious attitude but the increase in tinplate business in this country and the fact that the market is in a stronger statistical position than at any time in six years are combining to make sentiment more bullish than ever.

Antimony—The strong position of antimony as a result of the civil war in China has been reflected in constantly advancing prices.

Aluminum—The aluminum market is firm and unchanged at the published price of the domestic producer, 27.00c for 98 to 99 per cent virgin ingot, 28.00c for 99 per cent. Importers have been sounding the market for first half of 1925.

Prices of Nearly All Metals and Products Go Up Rapidly with Active Buying

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
Copper, hot rolled	21.12½
High brass	17.87½
Zinc, ga. 9 to 18 (plates ½c less)	10.25
Lead, full sheets (cut ½c more)	12.50
Aluminum, bright, 0 to 35 gage	37.50 to 92.00
SEAMLESS TUBES	
High brass	22.25
Copper	23.25
RODS	
High brass, round, ⅝ to 2½-inch	15.87½
Naval brass rods	18.62½
WIRE	
Copper	15.75 to 16.00
High brass	18.37½

Old Metals

Dealers' buying prices cents per pound

HEAVY RED BRASS	
New York	8.25
Chicago	8.75
Cleveland	9.00
HEAVY YELLOW BRASS	
New York	6.50 to 6.75
Chicago	7.00
Cleveland	7.00
ZINC	
New York	3.50 to 3.75
Chicago, dross	4.50
Cleveland	3.75
HEAVY COPPER AND WIRE	
New York	11.00
Chicago	11.00
Cleveland	11.00
RED BRASS TURNINGS	
New York	7.50
Chicago	8.50
Cleveland	8.75
YELLOW BRASS TUBING	
Cleveland	7.00
NO. 1 BRASS ROD TURNINGS	
New York	7.25 to 7.50
Chicago	7.75
Cleveland	7.50
LIGHT COPPER	
New York	9.00 to 9.50
Chicago	9.50 to 9.75
Cleveland	9.50
LIGHT BRASS	
Chicago	6.75
Clippings, Chicago	9.00
ALUMINUM	
Borings, Cleveland	11.00
Old sheet, Cleveland	16.50 to 17.00
Clippings, Cleveland	20.00

Secondary Metals

Remelt aluminum No. 12	21.50 to 22.00
Brass ingot 85-5-5-5	11.75 to 12.00

Will Start Sheet Mills

Initial operation of the new sheet mill unit at the Brier Hill division of the Youngstown Sheet & Tube Co. will begin Nov. 17. This unit includes eight mills which will be scheduled on high-grade sheets and marks the entrance of the company into the full finished sheet industry. Completion of this unit gives the Mahoning valley district 28 mills devoted to the production of high-grade sheets, 20 being operated by the Newton Steel Co.

To Show Doubling Machine

A demonstration of an automatic tin plate doubling machine will be given Nov. 13 at the main plant of the Aetna Foundry & Machine Co., Warren, O. Numerous producers of tin plate in this country plan to be present or will have representatives view the operation.

Import Ore and Pig Iron

Philadelphia, Nov. 11.—Imports at this port during the week ending Nov. 8 include 1000 tons of manganese ore from British India; 33 tons of manganese ore from Germany; 15,600 tons of iron ore from French Africa; 2100 tons of chrome ore from Cuba; 2 tons of scrap steel from England; 1000 tons of pig iron from British India; 96 tons of steel shapes from Belgium, and 3450 tons of pig iron from England.

Scrap Holds Firmer Tone

(*Concluded from Page* 1274)

steel is being held at $11.50, the lowest price in a long while.

Much Inquiry in East

Philadelphia, Nov. 11.—Considerable inquiry has come out for steel scrap but little buying has resulted. Dealers generally are asking higher prices. Due to better sentiment resulting from the election and the rising tendency of finished steel prices they have declined bids of $17.50, delivered on No. 1 melting steel. Cast scrap demand has been quiet for some time and stocks of cast scrap are fairly large, so the easy tendency shows in some grades like grate bars. Cupola cast is somewhat higher.

Buffalo Market Feels Impetus

Buffalo, Nov. 11.—The scrap market has taken on a firmer aspect since election, and dealers are of the opinion its strength is well founded. Already heavy melting steel shows an advance of 50 cents to $1 a ton. A good tonnage of material is reported to have been sold within the past few days at $18 and there are reports of other sales at $17.50. In all something like 12,000 or 15,000 tons of heavy melting steel has been sold since election, for delivery over a period of about 60 days. The advance in local prices has caused dealers to hold material for prospective consumption here although outside steelworks offer slightly higher prices, in some instances. There have been large receipts of material from Hudson valley points by barge canal. Prices of other materials are nominally unchanged because sales have not been made in volume within the past week but an active inquiry for other materials indicates their price trend may be upward when new deals are made.

Cleveland Market Stronger

Cleveland, Nov. 11.—Sales of iron and steel scrap to consumers are not large in this district but the market is somewhat stronger, prices being marked up on an average of about 50 cents a ton all along the line within the past week. Dealers have fairly large stocks but are unwilling to let go to tonnages of importance at present quotations, believing higher figures will be available in the near future as demand broadens. Melters are expected to enter the market shortly as present scrap stocks dwindle and needs become pressing. Heavy melting steel is up to $16 50 to $17; machine shop turnings, $14.25 to $14.50; cast borings, $14 75 to $15; No. 1 cast, $19 to $19.25; heavy cast, $13.25 to $13.75; hydraulic compressed sheets, $14 25 to $14 50; bundled sheets, $13 to $13.50; agricultural malleable, $18.25 to $18.50; railroad malleable, $18.50 to $19; No. 1 railroad wrought, $14 to $14.50.

Heavy Railroad Offerings

Cincinnati, Nov. 11.—Accumulations of scrap are being offered by railroads in much better tonnage than for several months. While the increase is general and most railroads are marketing large tonnages, a few lists are unusual and promise to have a decided effect on the market. The Norfolk & Western railroad will close this week on 8000 tons and the Southern railroad on 35,000 tons. Consumer buying continues on a small scale, but activity in other centers has reflected itself in firmer prices here. Dealers have marked up their lists on an average of 50 cents a ton to bring quotations in line with other markets. A leading seller reported the sale of 10,000 tons of scrap to a consumer at Portsmouth, O. This undoubtedly was the largest sale transacted in this district in weeks.

Valley Operations Gain

Youngstown, O., Nov. 11.—Sheet mill operations have rebounded to 64 per cent of capacity after having been on a 52 per cent basis for a week. Seventy-seven units are scheduled, 17 at the Youngstown Sheet & Tube Co., 12 at the Republic Iron & Steel Co., 10 at the Newton Steel Co., nine at the Sharon Steel Hoop Co., seven each at the Trumbull Steel Co. and the Falcon Steel Co., six at the Thomas Sheet Steel Co., five at the Mahoning Valley Steel Co. and four at the Waddell Steel Co.

Independent steelworks activity is unchanged at 56 per cent of capacity. Twenty-nine open hearths are being poured and include 11 at the Youngstown Sheet & Tube Co., eight at the Republic Iron & Steel Co. and five each at the Sharon Steel Hoop Co. and the Trumbull Steel Co.

Miscellaneous operation includes seven pipe and a plate mill at the Youngstown Sheet & Tube Co., five pipe, three bar and two skelp at the Republic Iron & Steel Co., four strip mills at the Sharon Steel Hoop Co., and 19 tin and three hot strip at the Trumbull Steel Co.

Pittsburgh Mills Busy

Pittsburgh, Nov. 11.—While operations have not increased much since election, should orders continue in the increased measure noted within the past few days a gain will follow. Steelmaking still averages 60 to 65 per cent. The Carnegie Steel Co. started the week with 48 to 50 per cent of ingot capacity occupied, but usually finishes with possibly 68 per cent engaged. Independents are running 50 to 70 per cent of open-hearth capacity. The Carnegie Steel Co. added a blast furnace stack at Mingo Junction, O., Nov. 4, giving it 33 out of 59 furnaces active, and will shortly put another into commission at some point not yet decided.

Aetna Company Expanding

Construction work has been started on a new building, 110 x 180 feet, by the Aetna Foundry & Machine Co., Warren, O. The building will be of concrete and steel construction and will house a new machine shop which was made necessary to fulfill the demand for sheet and tin mill equipment. The steelwork will be fabricated by the Blaw-Knox Co., Blawnox, Pa. Two cranes, one 5-ton and one 10-ton, furnished by the Northern Engineering Co. will be installed. The present machine tool equipment will be moved into the new shop when completed and sufficient new tools will be purchased to round out the equipment. This is the second increase in capacity made in the past three years by the Aetna company. Leif Lee, Youngstown, O. is supervising the work.

By-Products Steady

Sulphate Moves Slowly With Cuba Taking Most Export—Benzol Scarce

New York, Nov. 11.—Buying of scattered car lots for rounding out long term contracts features domestic buying of sulphate of ammonia. Prices continue at $2.65 works. There has also been some fair buying for Cuba, and while not definitely confirmed, it is understood that most of this business went around $2.90, double bags, seaboard. Other foreign demand is sluggish, with little business to test the situation as applied to shipments to the Far East, where brisk competition would be likely to enter. Supplies are still scarce. While production is improving somewhat, such improvement was discounted at the time long term contracts were made, with the result that current shipments have shown a proportionate increase.

Scarcity in benzol continues pronounced. However, owing to competition afforded by petroleum, prices remain steady at 23 cents works in tank lots and 30 cents in drums for pure benzol and 23 cents in tanks and 28 cents in drums for 90 per cent benzol. Toluol is still quoted at 26 cents in tanks and 31 cents in drums; solvent naphtha, 25 cents in tanks and 30 cents in drums, and commercial xylol, 26 cents in tanks and 31 cents in drums.

Naphthalene for nearby shipment continues to hold at 6 cents works for flakes and 7 cents for balls in carload lots and 6½ cents works and 7½ cents works, respectively, for material in less than carload lots. Future shipments are being placed about ⅛ to ¼-cent higher.

Phenol is holding at 27 cents local warehouse for spot and 25 cents works for future business.

Coke Oven By-Product

Spot*	
Per Gallon at Producers' Plants in Tank Lots	
Pure benzol	$0.25
Toluol	0.26
Solvent naphtha	0.25
Commercial xylol	0.26
Per Pound at Producers' Plants	
Phenol	0.27
Naphthalene flake	0.06
Naphthalene balls	0 07
Per 100 Pounds at Producers' Plants	
Sulphate of ammonia	$2.65
Contract	
Pure benzol	Nominal
Toluol	Nominal
Solvent naphtha	Nominal
Commercial xylol	Nominal
Per Pound at Producers' Plants	
Phenol	$0.25
Naphthalene flakes	Nominal
Naphthalene balls	Nominal

*Spot distillates are subject to shading.

Chicago Operations Steady

Chicago, Nov. 11.—Operations in the Chicago district show practically no change. Fourteen of the 30 blast furnaces of two leading steel producers continue active. Steel ingot operations are on the basis of 69 to 73 per cent.

Traffic Committee

Formulating Shippers' Program—Rate Cut May Be Asked

Pittsburgh, Nov. 11.—The committee of 11 appointed at a meeting of about 40 traffic managers of iron and steel companies in the greater Pittsburgh territory held here Oct. 30 met at the Chamber of Commerce building, Wednesday, at 11 a.m. The call is issued by A. R. Kennedy, traffic manager of the Pittsburgh Steel Co. Mr. Kennedy is chairman of the committee composed of the following: Pittsburgh district, D. C. Moore, traffic manager chamber of commerce, Pittsburgh; J. W. Matthews, Central Tube Co., Pittsburgh; H. N. Holdren, Pittsburgh-Des Moines Steel Co., Pittsburgh; J. J. Eichenberger, Pittsburgh Crucible Steel Co., Pittsburgh, and A. R. Kennedy, Pittsburgh Steel Co., Pittsburgh; Youngstown district, H. D. Rhodehouse, traffic manager, chamber of commerce, Youngstown; Canton district, R. B. Robinson, United Alloy Steel Corp., Canton; Johnstown district, H. C. Crawford, Bethlehem Steel Corp., Bethlehem, Pa.; Beaver valley district, M. T. S. Orner, Pittsburgh Bridge & Iron Works, Rochester, Pa.; and Wheeling-Steubenville-Weirton district, A. P. Oxtoby, Wheeling Steel Corp., Wheeling, W. Va., and W. F. Morris, Weirton Steel Co., Pittsburgh.

The meeting was called to crystallize ideas of the committee members who have been receiving suggestions from the shippers in their respective territories as to the relief desired from the carriers in connection with the problems presented to them in the abolition of Pittsburgh plus. It is possible that a request will be made for a $2 per ton reduction on the through freight rates to points west of the Mississippi river which now have no through tariffs.

Considerable hardship has been added to the shippers in the Pittsburgh district owing to the recent advance in short-haul freight rates in intersate commerce making the rate from Pittsburgh to Youngstown 11 instead of 9½ cents per 100 pounds the same rate applying from Pittsburgh to Wheeling and from Pittsburgh to Johnstown. The rate from Pittsburgh to Beaver Falls now is 8 cents instead of 7 cents, while from Pittsburgh to Monessen it has been increased from 6 to 7 cents per 100 points. The change affects all tariffs below 15½ cents and as noted last week became effective Nov. 1. The shippers here are accepting the increase for the time being although it is possible that modification may be requested later.

A meeting is being held in Buffalo today at the Hotel Buffalo which is a postponement of a similar meeting held here Oct. 23 of shippers and carriers wherein the trunk line class rate adjustment proposal was considered. The meeting in Buffalo was called to give the shippers in the vicinity of Buffalo an opportunity to be heard on the proposition.

Rate Readjustment Plan Is Discussed at Chicago

Chicago, Nov. 11.—Traffic managers of middle western shippers and chambers of commerce will meet in Chicago Thursday to consider the proposed readjustment of class freight rates between central and eastern territory. The same group will confer Friday with railway officials for discussion of the proposal The next step will be a hearing before the interstate commerce commission.

Eastern railroads have proposed to establish a mileage scale of class rates for application within the territory east of Buffalo and Pittsburgh and west of New England and in doing so have suggested some important changes in east and westbound rates between central and eastern territories.

Shipping Board Orders Diesel Engines

Washington, Nov. 11.—Bids have been accepted for equipping 18 of the United States shipping board cargo vessels with diesel engines under the $25,000,000 loan construction fund authorized by congress. The action of the board was taken in a resolution which authorized the purchase of 13 single acting diesels as follows:

Four of 3000 horsepower from Busch-Sulzer Diesel Engine Co., St. Louis; four of 2800 horsepower from the Cramp Ship & Engine Building Co., Philadelphia; three of 2700 horsepower from McIntosh & Seymour Corp., Auburn, N. Y.; and two of 2900 horsepower from the Pacific Diesel Engine Co.

To develop a domestic diesel industry and to obtain such benefits of decreased costs, weights and space, as well as possibility of greater powers, which the double acting principle appears to offer, the board also has authorized the purchase of the following double action engines:

One of 2700 horsepower from McIntosh & Seymour Co.; one of 3000 horsepower from the New London Ship & Engine Co., Groton, Conn.; and two of 2900 horsepower from the Worthington Pump & Machinery Co., Buffalo, N. Y.

Ryerson Buys Milwaukee Warehouse Interest

Stockholders of Joseph T. Ryerson & Son, Inc., Chicago, have purchased a substantial interest in the Reed-Smith Co., at Nineteenth and South Canal streets, Milwaukee. The Reed-Smith Co. is a successful independent steel warehousing company, having a large and varied line of finished steel products in stock, with ample facilities for quick loading and shipment.

Under the new plan the officers of the Reed-Smith Co. are: D. M. Ryerson, president; George W. Smith, vice president and general manager; E. L. Hartig, treasurer; Carl Gallauer, secretary.

The Milwaukee stocks and facilities of the Reed-Smith Co. soon are to be increased. In addition, Joseph T. Ryerson & Son will maintain practically daily car service from Chicago for prompt delivery of special orders and sections that are only carried in the largest warehouses.

Joseph T. Ryerson & Son, one of the largest independent steel warehousing organizations in the country, operates six plants, at Chicago, St. Louis, Cincinnati, Detroit, Buffalo and New York. A complete range of steel products, including bars, shapes, plates, sheets, tubes, rivets, bolts, nuts, etc. are maintained at all six plants.

Opens Welding School

In line with the engineering assistance rendered to its customers through its industrial engineering department, the Air Reduction Sales Co. is organizing a special class of foremen, superintendents and other executives at the Airco-Davis-Bournonville Welding institute, Jersey City, N. J., Nov. 17, for instruction on the theory and practice of the oxyacetylene process, and the industrial phases of industrial gases, uses, application and plant distribution. Organization of new classes for the fall and winter will be announced later.

M. A. Hanna Has Deficit

The M. A. Hanna Co., Cleveland, pig iron, coal and ore interest, reports net profits for the first nine months of 1924 amounting to $313,033. After allowances for charges, depreciation, interest and estimated taxes, business for the nine months resulted in a deficit of $1,130,008. Of this, $775,830 represents the company's proportion and $353,178 the minority stockholders' proportion. Depreciation and deflation for the nine months was placed at $1,011,710; interest at $415,322 and federal taxes, $16,009.

Coast Outlook Is Good

Present Business Lacks Volume but Building Prospects Are Large—Utah Iron Supplants Imported Brands—Prices Hold Firm

SEATTLE, Nov. 8.—Business conditions on the Pacific Coast are regarded as fundamentally sound although volume is lacking. Election results are expected to have a stimulating effect on buying but no general stocking up will be done before inventory.

Construction activity is still marked. Portland will proceed at once with Medical Arts building, a $400,000 6-story concrete structure. In Seattle Minor hospital is planning a 7-story fireproof addition to cost $300,000. The Washington Securties Co., Seattle, is having plans drawn by Architect Henry Bittman for a $250,000 addition to the Securities office and store building. The additions will be four stories and are the first of several similar units.

Pig Iron and Coke

The field for imported pig iron is evidently to be limited in this district by the active competition of Columbia, Utah, iron which seems to be meeting general favor. This is selling on analysis and is able to undersell the better grades of foreign iron. Local importers who have kept stocks of Glengarnock have disposed of their supplies. Best grades if imported are offering at about $31. Buying is not active and interest in any variety is not expected until the end of the year.

Fernie, B. C., coke is again offered after being off the market for more than six months on account of labor trouble. It is quoted at $16.09 f.o.b. plant here, a reduction of 40 cents from the previous price. In view of the increased consumption of domestic coke and the interest in Fernie, there will be little call for imported or Eastern grades.

Bars, Plates and Shapes

There is not much activity in bars. The lateness of the season is responsible for less demand for reinforcing material while merchant bars are arousing little interest. Wholesale jobbers in the Seattle territory are holding firm at 3.25c although in the Portland district the cut price of 3.00c is still in effect. Foreign material is offered at 1.80c but dealers hesitate to place orders. The best price quoted for domestic bars this week is reported at 2.35c. Awards of the week include 385 tons to the Pacific Coast Steel Co. for the Seattle light department warehouse and an unstated tonnage went to the Manitoba Steel & Iron Co., Winnipeg, for the Canadian Pacific railroad hotel at Lake Louise. Awards pending include unstated tonnage for the Concrete, Wash., plant of the Superior Portland Cement Co. bids to be opened Nov. 13, and 220 tons for Twelfth avenue bridge, Seattle, bids Nov. 21.

Fabricating shops are reasonably busy, but many contracts are being completed and less work is under way. This week bids were opened by the Alaska railroad for 30 steel spans, involving 3800 tons. The American Bridge Co. submitted the low figure. No award has yet been made. Seattle will open bids Nov. 21 for concrete floor and approaches to the Twelfth avenue south bridge requiring 220 tons of reinforcing material and 522 tons of structurals. King County, Wash., has approved plans for a 270-foot steel span over the Stuck river involving 175 tons. Pierce county, Wash., is soon to call for tenders for a 360 foot span requiring 400 to 500 tons of steel. Bids will be opened Nov. 13 for 14 towers for the aerial tramway for the cement plant at Concrete, Wash., tonnage unstated. The Wallace Equipment Co. has secured 100 tons for Seattle light department warehouse and a similar tonnage for the Pacific Coast Steel Co.'s plant extension. Best price quoted on shapes this week is 2.35c.

There is limited interest in plates. The best price quoted this week was 2.25c. The largest contract unawarded consists of 800 tons of plate for 24 and 36-inch riveted or lock bar pipe, 15,000 lineal feet, for the First avenue south, water extension project at Seattle.

Finished Materials

Jobbers report business slack but there is a promising volume of business for early 1925. Building materials continue in fair demand and sheets are registering a satisfactory volume although the movement is less than 30 days ago.

Ingot Output

With 3,111,452 Tons in October, at Highest Point Since April

Making a gain of 296,456 tons, steel ingot production in October went over the 3,000,000-ton level for the first time in six months. Average daily output was over 115,000 tons and also was the highest in a half year. According to statistics compiled by the American Iron and Steel institute from reports supplied from companies making 94.84 per cent of the country's total in 1923, the total October production amounted to 3,111,452 gross tons. This was a gain of 296,456 tons over the 2,814,996 tons of September. October had 27 working days as compared with 26 in the month before. The October output was the highest since April, the first month of the decline, when a production of 3,333,535 tons was recorded. Production of the reporting companies in October was 2,950,901 tons, and an increase of 281,159 tons over the 2,669,742 tons of September.

In October the approximate daily average for the country was 115,239 tons, a rate which was an increase of 6970 tons, or 6.4 per cent over the 108,269-ton rate of September. Over the July rate of 71,901 tons, the low point for the year, the increase amounted to 60.3 per cent. The increase of September over August was 10.7 per cent. On the basis of 311 working days in the year and a daily production of 115,239 tons for October, the annual indicated rate of production was 35,840,000 tons. The indicated rate for September was 33,670,000 tons. Production of ingots in October represented 71.5 per cent of the record production rate of March.

Comparison of steel ingot production by months for 1923 and the first 10 months of 1924, as compiled by the institute, are shown in the accompanying table.

Steel Ingot Production, 1923-24

94.84 Per Cent of Industry Reporting
Gross Tons

1923	Open-hearth	Bessemer	All other	Monthly production companies reporting	Calculated monthly production all companies	No. of working days	Approximate daily production all companies gross tons	Change in daily production per cent
Jan. ..	2,906,892	728,270	9,467	3,644,629	3,841,095	27	142,263	+ 7.7
Feb. ..	2,613,564	669,903	10,797	3,294,264	3,471,843	24	144,660	+ 1.7
Mar. .	3,046,309	799,525	12,841	3,858,675	4,066,680	27	150,618	+ 4.1
Apr. ..	2,974,579	772,485	13,933	3,760,997	3,963,736	25	158,549	+ 5.2
May ..	3,136,558	847,418	16,719	4,000,695	4,216,355	27	156,161	— 1.5
June.	2,821,239	737,845	15,483	3,574,567	3,767,256	26	144,894	— 7.2
July ..	2,658,449	680,884	11,496	3,350,829	3,531,458	25	141,258	— 2.5
Aug. .	2,796,370	701,059	9,326	3,506,755	3,695,788	27	136,881	— 3.1
Sept.	2,562,771	613,709	8,602	3,185,082	3,356,776	25	134,271	— 1.9
Oct. ..	2,735,513	649,452	9,163	3,394,128	3,577,091	27	132,486	— 1.3
Total 10 Mos.	28,252,244	7,200,550	117,827	35,570,621	37,488,078	260	144,185	.....
Nov. ..	2,348,361	616,335	9,309	2,974,005	3,134,321	26	120,551	— 9.0
Dec. ..	2,135,898	570,004	10,912	2,716,814	2,863,266	25	114,531	— 5.0
Total	32,736,503	8,386,889	138,048	41,261,440	43,485,665	311	139,825	
1924								
Jan. ..	2,766,534	667,032	12,577	3,446,143	3,633,639	27	134,579	+17.5
Feb. ..	2,902,641	695,905	14,085	3,612,631	3,809,185	25	152,367	+13.2
Mar. ..	3,249,783	706,801	15,260	3,971,844	4,187,942	26	161,075	+ 5.7
Apr. ..	2,575,788	573,381	12,356	3,161,525	3,333,535	26	128,213	+20.4
May ..	2,060,896	425,099	6,648	2,492,643	2,628,261	27	97,343	—24.1
June ..	1,637,660	310,070	2,622	1,950,352	2,056,466	25	82,259	—15.5
July ..	1,525,912	241,880	5,162	1,772,954	1,869,416	26	71,901	—12.6
Aug. ..	2,042,820	361,781	5,759	2,410,360	2,541,501	26	97,750	+36.0
Sept. .	2,252,976	409,922	6,844	2,669,742	2,814,996	26	108,269	+10.7
Oct. ..	2,505,403	438,468	7,030	2,950,901	3,111,452	27	115,239	+ 6.4
Total 10 Mos.	23,520,413	4,830,339	88,343	28,439,095	29,986,393	261	114,890	.....

British Steel Trade Reviving

Strength Shows in Pig Iron and Steel Buying Broadens, Though Prices Are Unchanged—German Producers Crowd Welsh Tin Plate Makers—Exports Show Increase—Continental Prices Are Stronger

Iron Trade Review Staff Cable

European Headquarters,
IRON TRADE REVIEW,
2-3 Caxton House, Westminster, S. W.1

LONDON, Nov. 11.—Revival has started in the British iron and steel market and pig iron is stronger. Steel buying is expanding but prices are unchanged. Bolckow, Vaughan & Co., Middlesbrough, have booked 24,000 tons of rails for Uganda, South Africa, Cammell, Laird & Co., have booked 40 miles of rails for New Zealand, valued at £50,000 ($231,000). Increasing buying is being done in steel scrap and prices are rising.

Tin plate makers are encountering more severe competition on the part of German producers.

British pig iron production for October is 600,000 tons, with 170 stacks in blast. Steel ingots and castings production in October totaled 680,000 tons. Pig iron compares with 588,900 tons in August, 615,600 in July and 607,800 in June. Ingot total in August was 527,500 tons, in July 693,300 tons and in June 651,500 tons.

October exports from Middlesbrough show an improvement. America took 4835 tons of pig iron. Brussels reports prices for steel products are stronger. Steel mills are booking for weeks into the future and French producers are following the same course.

The Roechling company's iron and steel plant in Germany is resuming operations after having been almost shut down for some time.

British Exporters Facing Many Difficulties

European Staff Special

LONDON, Nov. 1.—Export business in European iron and steel producing countries is quiet, the most important recent transaction being the large rail order for Manchuria divided between the Acieries de Micheville and De Wendel. In Great Britain improvement is slight but there has been some expansion in inquiries.

The reappearance of Japanese inquiries has been noticed and a few orders are reported to have been booked for finished steel products. Continental competition in Great Britain is still keenly felt, but although prices have continued to decline since the beginning of the month the volume of business is comparatively reduced, since many merchants and finishing mills in England have large stocks of continental material and are also still in hopes that prices will decline further. However, tonnages of continental semi-finished steel are coming into England at about £1 per ton ($4.48) below the domestic quotation. Foreign beams have also been sold in England and the total tonnage imported during September was 9220 tons against 5609 tons in the corresponding month of last year. Birmingham merchants have no difficulty in buying merchant bars at £6 per ton (1.22c. per pound) f.o.b. Antwerp, these bars being then shipped direct to foreign ports. On the other hand, it is reported from Paris that exports of steel in September were heavier than during the preceding month. French steel prices have reached a low level but the firmness of the sterling rate is tending to have a corresponding influence on prices and recently large steel orders have been obtained by several French mills from practically all points of the French territory, extending to Algiers. Luxemburg mills are competing and offering merchant bars at £5 10s (1.12c.) f.o.b. Antwerp.

Sterling $4.48

In the plate and sheet market Belgium has done some business and is reported to have obtained orders for medium-sized sheets from Great Britain and Italy. Belgian exports of plates and sheets during the first six months of 1924 were 128,000 tons against 85,000 tons in the corresponding period of last year. In France exports of plates and sheets were no greater in September than in August, but imports increased about 4000 tons. German tank plates are freely offered on export markets.

In the pig iron department conditions depend a great deal on exchange fluctuations. French and Belgian 2.5 to 3 per cent silicon foundry pig iron is offered at £3 10s ($15.80) f.o.b. Antwerp; since Middlesbrough foundry pig iron has dropped to £4 per ton ($18) it is difficult for the continental product to find its way in that district of England, but several sales of French and Belgian pig iron have been reported recently in Scotland. On the other hand, small parcels of British pig iron still find their way on the Continent. The French are selling pig iron to Italy. Exports of French pig iron in September were 62,711 metric tons against 51,256 tons in August. Imports were only about 1700 tons compared with about 3000 tons in August. Ferromanganese is quieter. British and Norwegian markets are still competing against each other in the French market and the Norwegians appear to quote the lowest prices. In view of this foreign competition exports of French ferros, especially ferromanganese, during September were considerably less than in August, while imports which were 300 tons in August amounted to about 1000 tons in September. One large steel works in France has contracted for 1500 metric tons of ferromanganese.

French iron and steel producers are dismayed at the project of the government to raise a tax on exports. Up to the present a tax of 1.1 per cent was raised on all import business, while export transactions were free of tax, but it is now proposed to tax all export business. This would not influence French business to a great extent when comparing prices prevailing in France with British prices, but in view of the keen competition and price cutting which takes place between Belgium, Luxemburg, Germany and France it is feared that such a tax would hurt the interests of French exporters.

The strike among steel workers which has been going on in Sheffield, England for nearly two months has ended, but since the works in that district have been reducing operations it is difficult to find work for all the men who were affected by the strike. A Sheffield works which had recently obtained an order for railroad buffers from the East Indian railway has received another order for 4500 similar buffers.

According to a statement by C. H. Armstrong, chairman of the Great Indian Peninsular railway, several tenders which were made at the beginning of October to his company showed the following differences between the lowest British tender and continental tenders, thus throwing light on the considerably lower prices offered by continental mills: for wheels and axles, British tender £920, continental tenders between £678 and £800; tseel tires for locomotives, British tender £1891, continental tenders from £1119 to £1531; bolts, nuts, rivets, etc., British price £283, continental price £206. Such differences exist also on other commodities.

Current Iron and Steel Prices of Europe

Prices Converted into Dollars at Rates of Exchange, November 10

	British Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgian and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Ports	
Export Prices f. o. b. Ship at Port of Despatch—By Cable	£ s d			Francs		Francs	£ s d	
PIG IRON								
Foundry No. 3, Silicon 2.50-3.00	$18.48	4 0 0*	$16.66	315	$16.66	345	$21.71	4 14 0
Basic	18.48	4 0 0	16.93	320	16.66	345	24.26	5 5 0
Basic-bessemer	20.79	4 10 0†	16.13	305	15.46	320	21.71	4 14 0
Hematite, Phosphorus 0.02-0.05	20.10	4 7 0	21.70	410	.....	...	26.57	5 15 0
SEMIFINISHED STEEL								
Billets	$31 19	6 15 0	$23.28	440	$22.94	475	$23.56	5 2 0
Wire rods	50.82	11 0 0	28.57	540	28.01	580	28.18	6 2 0
FINISHED STEEL								
Standard rails	$39.27	8 10 0	$26.98	510	$29.46	610	$28 90	6 5 0
Merchant bars	1.75c	8 10 0	1.16c	485	1.15c	525	1.17c	5 12 0
Structural shapes	1.65c	8 0 0	1.16c	485	1.15c	525	1.15c	5 10 0
Plates, ship, bridge and tank	1.81c	8 15 0	1.70c	710	1.38c	630	1.41c	6 15 0
Sheets, black, 24 gage	2.58c	12 10 0	2.88c	1,200	2.57c	1,175	2.51c	12 0 0
Sheets, galvanized, 24 gage, corrugated	3.61c	17 10 0	4 14c	1,725	4.82c	2,200	4.71c	22 10 0
Bands and strips	2 27c	11 0 0	1 70c	710	1.59c	725	1.71c	8 3 0
Plain wire, base	2.37c	11 10 0	2 21c	920	1.86c	850	1.91c	9 2 0
Galvanized wire, base	3.09c	15 0 0	2.93c	1,220	2 41c	1,100	2.20c	10 10 0
Wire nails, base	2.99c	14 10 0	2.40c	1,000	1.86c	850	2.25c	10 15 0
Tin plate, base box 108 pounds	$ 5.43	1 3 6	.....	....	.....	....	$ 6.47	1 8 0

Domestic Prices at Works or Furnace—Last Reported							Renten Marks
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$18.48	4 0 0	$15.87	300(2)	$16.66	345	$20.24	88
Basic pig iron	17.50	3 17 6	15.87	300(1)	15.46	320	22.54	98
Furnace coke	3.93	0 17 0	7.94	150	6 52	135	5.52	94
Billets	31.19	6 15 0	22.22	420	22.46	465	22.77	99
Standard rails	1 75c	8 10 0	1 10c	460	1.39c	625	1.25c	120
Merchant bars	1.81c	8 15 0	1.21c	505	1.13c	515	1.14c	109
Shapes	1.81c	8 15 0	1.16c	485	1.12c	510	1.13c	108
Plates, ship, bridge and tank	1.91c	9 5 0	1.70c	710	1.38c	630	1.28c	123
Sheets, black, 24 gage	2.89c	14 0 0	2.88c	1,200	2.63c	1,200	2.24c	215
Sheets, galvanized 24 gage, corrugated	3.66c	17 15 0	4.27c	1,770	4.87c	2,225	4.54c	435
Plain wire	2.37c	11 10 0	2.24c	935	1.86c	850	1.67c	160
Bands and Strips	2.37c	11 10 0	1.68c	700	1.59c	725	1.51c	145

*Middlesbrough; †Scotch foundry iron; (1) Basic-bessemer; (2) Longwy. British export furnace coke £0 17s 0d ($3.93) f. o. b. Ferromanganese' £13 10s 0d ($62.37) f. o. b. The equivalent prices in American currency are in dollars per ton for pig iron, coke, semifinished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

Belgian Trade Awaits Dawes Plan Proof

European Staff Special

BRUSSELS, Oct. 31.—Production of iron and steel is slowing down in Belgium owing to lack of demand. European industrialists are still in doubt as to the effect of the Dawes plan upon business. Attention has been centered upon the issue of four portions of the German loan in New York, London, Stockholm and Amsterdam. Subscriptions in all four centers were in excess of the amount offered. The wave of optimism which spread over the United States following the success of these loans has not reached Europe. Leaders in the steel industry in both France and Belgium realize that a period of deflation, such as England and the United States have experienced, must be passed through before business can be considered on a sound basis. It is their anticipation of this condition which has kept business from going ahead as credits have tightened and inventories have been watched until it may be said that the shelves of Europe's warehouses are empty.

The demand for foundry pig iron is holding up unusually well when one considers the situation on other products. Belgian prices have been low enough to take export business and considerable tonnage is finding its way to foreign markets through Antwerp. Foundry No. 3 is being done around 340 francs ($17) per metric ton f.o.b. Antwerp. English buyers prefer to buy in sterling exchange, which accounts for several sales having been closed at 70 shillings f.o.b. Antwerp.

Sterling—$4.46

Prices on semifinished steel products show a wide range, depending upon how badly the mills need orders. Buyers for England were making offers at the last meeting of the Brussels metals bourse as follows: Blooms, £4 15s; billets £4 18s 6d to £5; sheet bars £5 4s. Representatives of both Lorraine and Luxemburg mills appear on the market whenever tonnage is required to keep their plants operating, and on such occasions they readily underquote their Belgian competitors.

Despite the low prices at which Belgian mills are offering merchant bars the volume of business transacted has been negligible. Toward the close of the last session of the metals bourse, orders of 100 tons and over were being taken by the mills at £5 11s. This is about six shillings under last week's price. These prices were made to counter German competition. South America and India are buying Belgian steel but exports to Japan and China have practically ceased. Structural shapes are being sold on the same base as bars. Here, however, the situation is somewhat easier as Luxemburg and Lorraine mills are not seeking orders. Manufacturers of drawn steel products, such as wire and wire nails, are in desperate need of orders. Prices on various products have dropped an average of 50 francs ($2.50) per metric ton during the past eight days. German competition is unusually keen on export business. Wire nails have been reduced from 900 francs ($45) to 850 francs ($42.50). Similar cuts have been made on plain, annealed and galvanized wire which are now quoted at 850 francs ($42.50); 900 francs ($45) and 1100 francs ($55) respectively, per metric ton. German mills are getting most of the going business on heavy gage plates. On 3/16 inch thick and over they are quoting from £6 7s 6d to £6 10s f.o.b. Bremen or Hamburg, whereas Belgian makers have not been able to do better than £6 11s 6d f.o.b. Antwerp. Germany continues to take most of the orders for galvanized products.

IRON TRADE REVIEW
Registered U. S. Patent Office
The Authority of Industry *National and International*

Charles J. Stark, - - - - - - - - - - Editor
Earl L. Shaner, - - - - - Engineering Editor
John D. Pease, - - - - - Advertising Director

Published Every Thursday by
THE PENTON PUBLISHING CO., CLEVELAND, O.
Member, Audit Bureau of Circulation, Associated Business Papers, Inc., and National Publishers Association

BRANCH OFFICES
BOSTON - - - - - - - - - - 426 Old South Bldg.
CHICAGO - - - - - - - - - - 1147 People's Gas Bldg.
CINCINNATI - - - - - - - - - 406 Edwards Bldg.
NEW YORK - - - - - - 2203-2206 No. 220 Broadway
PITTSBURGH - - - - - - - - - 2148-49 Oliver Bldg
SAN FRANCISCO - - - - - - - 675 Monadnock Bldg.
WASHINGTON - - - - - - - - 84 Home Life Bldg.

FOREIGN OFFICES
BIRMINGHAM, ENG. - - - - - - - - Prince's Chambers
LONDON, ENG. - 2-3 Caxton House, Westminster, S. W. 1
PARIS, FRANCE - - - - - 23 Rue de la Bienfaisance

Cable Address IROTRAPEN, London, IROTRAPRI, Paris

Subscription, United States, Cuba and Mexico, $6 per year. Canada, $8.50 per year. Great Britain and other countries, £2:0:0 per year

Entered at the Postoffice at Cleveland as Second Class Matter
Copyright 1924 by the Penton Publishing Co.

What the Election Means

VOTES cast at a national election may be accepted as the expression of the inner consciousness of a whole people. Many preliminary gestures and much noise-making may precede the final registration of the result and temporarily befog the situation. However, under the American system, and the several months allowed for serious contemplation between the deciding of party nominations and platforms, and the balloting, it is the deliberate voice of the nation that speaks at the polls. Perhaps it is this opportunity for adequate reflection that is responsible for the confidence frequently expressed in the sober judgment of the American people.

Considered from this standpoint, the outcome of the presidential election is more than gratifying. It is a renewed assurance of the inherent virtue of sound, common sense possessed by the American people. Rarely in recent years has the issue between responsible thought and demagoguery, between orderly progress and untempered radicalism, been so squarely drawn. Probably never have the forces of the disgruntled, the impractical crusaders and the dissolute thinkers in the political and economic life of the country been so united under a single leadership. And the result was so completely overwhelming that it has left not a shred of doubt where the hearts and minds of the great mass of the American people stood.

If there is one thing that President Coolidge's astonishing victory signifies, it is that the nation after the disordered years during and following the war desires stability of character in its leadership and in its business affairs. The high regard for basic human virtues, as peculiarly exemplified in this campaign, has been made plain. The importance put upon keeping the country's business situation free of untried and uncertain theories has been equally demonstrated.

Manifestly the country wants a period of settled conditions under which it may go forward with those constructive processes of internal economic and political development for which the underlying factors are favorable. It wants less of class thinking or pampering by those entrusted with the details of government and more of common regard for the good of all.

One great truth the election again proclaims which cannot be driven home with too much force. America, blessed in some respects above all others, wants little of radicalism as it is commonly understood, in its political creed. Almost alone among the nations of the world, it is striving to preserve individual initiative and independence to which it owes so much for its present advancement. Despite its seeming lapse at times, the country still pins its faith to the old fashioned rule of thrift and integrity and in just rewards for honest endeavor. Business well may find gratification in this fact as well as some suggestions of things it should seek to maintain in its own conduct.

The reaction upon the country by the election has been eminently favorable. Confidence has been restored and increased. Tangible evidence of business held back and now released, has appeared on all sides while sentiment with respect to future conditions has become optimistic. It does not follow, however, that the election has created the foundations of prosperity. They were already deeply and firmly imbedded in the structure of economic conditions. The psychological restraints which recently have impaired the operation of these forces caused by political uncertainty, now have swept aside. Business enterprise and investment capital now may respond to the constructive influences of the situation without fear of revolutionary tinkering with the economic system. Seldom has the country beheld the future with greater encouragement and with more reasons than at present.

Effective European Combination Unlikely

WHEN the German delegates signed the London agreement last August it was with the expectation of finding some compensation for the long bill of reparations accruing under the Dawes plan through the re-establishment of their export trade. Exports are almost as vital to Germany as to England, and it is not surprising that Teutonic industrialists are eager to grasp whatever opportunities the European settlement has thrown in their path. The Ruhr is again dreaming of exports of five million tons of iron and steel products annually.

In England, France, Belgium, and even some parts

of the United States this dream has become a nightmare. Germany, as seen through the veil, is again about to gobble up the world's export trade in an orgy of price cutting. The reparations account is conveniently forgotten.

Some residents of this country, and some American newspaper correspondents in Europe, not content with the simple thrills which Germany alone can furnish, are now engaged in the fearsome business of viewing from afar a perfect monster of commercial rapacity—a Pan-European Steel Trust.

This dragon is pictured as joining the steel industries of Great Britain, France, Belgium, Luxemburg, and Germany into one huge export combination which shall forthwith devour the trade of the world.

The grain of truth behind this exaggeration lies in the fact that certain Lorraine and Luxemburg industrialists, who have always had close dealings with Germany and shares in German mines, are taking advantage of the resettlement of affairs under the Dawes plan to reunite their operations on both sides of the Franco-German frontier. Some of the leading men in this movement on the French side are related by blood and by marriage to prominent German coal and iron masters. While it is true that the Ruhr, Belgium, Luxemburg, and Lorraine are a unit from the economic standpoint, they owe allegiance to four different flags, and the day has not yet arrived in European business affairs when national political consideration can be ignored, except in special cases.

Progress there must be toward business co-operation between the great coal and fabricating industries of Germany and the pig iron and steel producers of France and Belgium, if the objects of the Dawes plan are to be realized. The re-establishment of the prewar international rail pool even can be visualized as a practical possibility. But an efficiently operating general European steel combination, working as a unit in export trade, is very unlikely to materialize. Agreements to regulate competition start with a severe handicap when weighted with national animosities of two thousand years standing.

Majority Gives Responsibility

INDICATIONS are that official returns of the election will assure the present administration a fairly substantial working majority in congress, with 55 seats in the senate and 246 in the house of representatives, if indeed the unofficial returns have not already given this assurance. Forty-nine votes are required to control the senate. Deprived of its legislative possibilities by working rules and coalitions imposed by the minority parties, the life of the majority party in the sixty-eighth congress was one of travail and at times humiliation. With a working majority established, the responsibility of the Republican party is great in the sixty-ninth and succeeding sessions of congress. The preponderance of blame for unsound legislation and dilatory procedure cannot be placed so easily upon the shoulders of the minority groups.

The count of 55 seats for the senate is on the assumption that a Republican will be elected in the special election in Connecticut called to select a successor to the late Senate Brandegee. The Democrats now have 40 seats, the Farmer Labor party one, Senator Magnus Johnson having been defeated in Minnesota by Thomas B. Schall, the blind Republican congressman from the tenth district in that state. Democrats in the senate also lost in Massachusetts, Colorado, Kentucky and Oklahoma. The Farmer Labor party of the Northwest has only one representative in the senate, Senator Henrik Shipstead. The claws of the La Follette group have been clipped decidedly.

In the sixty-eigth congress the actual majority in the senate was never more than six over the opposition, and often a minority when the La Follette insurgents combined with the Democrats. La Follette will seek, of course, to marshal a sufficient number of recalcitrants to block legislative programs. Such senators as Ladd and Frazier, of North Dakota, and Norris, of Nebraska, will continue to follow La Follette, with the addition at times, no doubt, of a group of near-insurgents such as Couzens and Howell.

In the house also, the administration will have a comfortable working majority over the La Follette-Nelson group. The Republican majority in the house will be about 47, compared with a nominal majority in the present house of only 15. Of course, bloc coalitions in the house still could overcome this majority, but the Republicans are looking to the possibility that the returns of election day may bring home the fact that blocs are not as popular as they may have been.

Cost Is Not Dominating Factor

TWO articles in the last issue dealt with applications of electric heat. One was a description of a new electric heating furnace for annealing steel castings. The other was a general summary of the present status of the use of electricity for industrial heating.

Both articles are subject to the possible criticism that they contain few figures on the cost of electric operation as compared with that of oil or gas fired units. Despite the fact little authentic information on comparative costs is available, such data are by no means unobtainable.

Perhaps the hesitancy of furnace builders and engineers to delve into the cost factor is due to the questionable value of the results that would be obtained. In recent years the importance of operating costs has been more and more tempered by other considerations such as convenience, initial investment, labor problems, working conditions, frequency of operation, etc. A manufacturer using one type of furnace with complete satisfaction is not inclined to swing over to another for the sake of a lower operating cost unless the saving

in that direction, plus other advantages, clearly outweigh the initial cost of the change. The day-to-day cost of operating equipment is important, but it is not the dominating factor it once was.

Yesterdays in Industry

Trade and Technical News from IRON TRADE REVIEW 10, 20 and 30 Years Ago

November 8, 1894

HISTORY ever is repeating itself. Just as the recent presidential election cleared the air and gave an open road for business, so the congressional and state election 30 years ago assured the return of the protective tariff. Populism was defeated, as La Follette radicalism has been buried. Postponed buying was expected to appear at once.

* * *

"Now let the country drop politics for a while and give its attention strictly to business."

"Business and politics can part company for a time. Business has suffered much from the intimacy and is bound to be a great gainer in the separation." These statements from two editorials could just as well have been written today.

* * *

Plants of the United States Iron & Tin Plate Co., Demmler, Pa., and Wallace, Banfield & Co., Irondale, O., set Monday, Nov. 5, for resumption of operation at reduced wages for tin mill workers. None of the old workers showed up and new men were to be employed.

* * *

The new foundry plant of the Whiteley Malleable Castings Co., Muncie, Ind., was opened with much ceremony, addresses by the mayor and other dignitaries being a feature. It was the largest plant of its kind in the country.

* * *

November 10, 1904

AFTER all, human progress seems to be somewhat like a merry-go-round, much the same thing being repeated. With talk at present rife as to the formation of a pool among European rail makers, such a combination actually was in existence at the above date. England, German, Belgium and France participated. The price agreed on was $20.70, f.o.b. shipping port, giving a delivered price of $28.53 Pacific coast ports. The American price of $28, mill, allows foreign rails to enter.

* * *

Election of Theodore Roosevelt as president did not cause a ripple in the business sea. The only comment in this issue is that the campaign had caused no disturbance.

* * *

The American Radiator Co. paid its initial dividend of 1 per cent per quarter on common stock after six years of existence during which working capital had been built up from earnings.

* * *

November 12, 1914

RADICAL labor legislation proposed on the Pacific coast was decisively defeated at the referendum elections held in that section.

* * *

Unfilled tonnage of the United States Steel Corp. was at the lowest point since June, 1911. The losses of the two months were 752,234 tons.

* * *

England stops export shipments of ferromanganese to prevent supply reaching Germany. Plans are being started to produce domestic material for steel needs.

Some Prices from the Past

	Nov. 8, 1894	Nov. 10, 1904	Nov. 12, 1914
Basic, Pittsburgh	....	14.85	13.45
Bessemer, Pittsburgh	11.00	14.85	14.70
No. 2 foundry, Pittsburgh	10.50	15.10	13.70
No. 2 foundry, Chicago	10.00	15.50	13.00
Lake Superior, Chicago	13.00	16.00	16.00
No. 2 southern, Birmingham	....	12.50	10.00
Bars, steel, Pittsburgh	....	1.30c	1.10c
Bars, steel, Chicago	1.20c	1.565c	1.28c
Plates, Pittsburgh	1.30c	1.40c	1.10c
Shapes, Pittsburgh	1.25c	1.40c	1.15c
Heavy melting steel, Pittsburgh	....	14.00	10.25
Heavy melting steel, Chicago	7.00	12.00	8.50

Protest Proposed Rate Increases

To the Editor:

The proposed increases in freight rates now under consideration by the railroad carriers in trunk line territories are giving us considerable concern because of the effect they will have on us in the cost of materials we are buying, particularly supplies originating in the eastern states.

The freight factor, as you can readily appreciate, plays a very important part in our costs, and any substantial increase in transportation charges may make the buying in some localities prohibitive.

We are undertaking a complete study of our situation giving particular attention to the question of the effect the proposed freight increases may have on our relations with our present sources of supply.

We invite your attention and consideration to an example as, to the changes we are informed are contemplated in the class rates:

	1	2	3	4	5	6
Detroit to New York						
Proposed	$1.265	$1.065	$0.845	$0.63	$0.44	$0.355
Present	1.11	.97	.735	.515	.44	.375
Increase or decrease	.155	.095	.11	.115	0	.02
New York to Detroit						
Proposed	$1.265	$1.065	$0.845	$0.63	$0.44	$0.355
Present	1.11	.97	.735	.515	.44	.375
Increase or decrease	.155	.095	.11	.115	0	.02
Detroit to Philadelphia						
Proposed	$1.245	$1.045	$0.825	$0.61	$0.42	$0.355
Present	1.09	.95	.715	.495	.42	.355
Increase	.155	.095	.11	.115	0	0
Philadelphia to Detroit						
Proposed	$1.245	$1.045	$0.825	$0.61	$0.42	$0.355
Present	1.05	.91	.715	.495	.42	.35
Increase or decrease	.195	.135	.11	.115	0	.005
Detroit to Boston						
Proposed	$1.335	$1.125	$0.895	$0.675	$0.475	$0.375
Present	1.18	1.03	.785	.555	.47	.39
Increase or decrease	.155	.095	.11	.115	0	.015
Boston to Detroit						
Proposed	$1.335	$1.125	$0.895	$0.67	$0.44	$0.375
Present	1.11	.97	.735	.515	.44	.37
Increase	.225	.155	.16	.155	.03	.005

Your traffic department will inform you as to the manner in which the increases are proposed from your locality to Detroit, and it is suggested that through your local association or the chamber of commerce you make known your views in the matter to the carriers and to the interstate commerce commission when the hearings are set in your locality.

R. H. ALLEN.

Director of Purchases,
Dodge Bros.,
Detroit, Nov. 1.

Consumers To Work Out Problem

Federal Trade Commission View Is That Steel Users Can Determine Final Situation as to Prices Under Economic Laws—Mill Base Price Believed Most Potent Means To Give True Market

WASHINGTON, Nov. 11.—Consumers of steel may be expected in the long run to regulate inequalities or maladjustments in the establishment of new price basing methods to supersede Pittsburgh plus, according to views of the federal trade commission. It is pointed out that a number of complaints already have come to the commission, largely from the East but more recently from the West and South, from consumers who are expecting results from the abolition of Pittsburgh plus. These complaints in most cases have claimed price discrimination.

Some of the complaints express dissatisfaction with prices on plates at Chicago and Birmingham. It has been pointed out that plates at Chicago are $4 above the Pittsburgh price, and that plates at Birmingham are $5 above Pittsburgh. The commission is answering these letters of complaint, but is announcing that it does not intend to interfere with the processes of price determination now under way. The commission's stand is that its cease-and-desist order did not apply to independent producers but that it is expected the independents will follow the course adopted by the United States Steel Corp. Complaints of this sort, according to the commission's view, will help establish basing points that will result in a minimum of discrimination. The view is that consumers expect some changes in price bases as a result of the order and abolishing Pittsburgh plus, and that this attitude will be of material strength in bringing about results sought by the commission.

Start Price Competition in Wire

With price competition started in wire products, it is the belief of the commission, a general Pittsburgh basing price on these products naturally will disappear. It is pointed out that prior to the cease-and-desist order, price competition upset the Pittsburgh plus prices on plates, shapes and bars in Chicago, but that price competition was not sufficient to upset the system on sheets and tin plate.

The theory advanced has been that if producers sold on a mill base, prices would come down to a level more nearly consistent with the costs of production which obtain in Chicago and elsewhere. This theory is not entirely justified, however, in the present market situation, with a stiffening tendency of steel prices being shown. The commission had expected lower and more uniform prices, holding that Pittsburgh plus prices were discriminatory. The advantage pointed out in varying mill base prices has been that when a steel company seeks to expand its domestic market territory the price must be lowered to all the customers of a given mill.

Argument of counsel in the Pittsburgh plus proceedings was that Chicago had put a base price of its own on plates, shapes and bars, which in 1921, was as low as the Pittsburgh price, because the Chicago mills sought to expand and thus reduced prices. Under a given mill price, it is pointed out, every purchaser will demand the same price, with possibly some exceptions in the so-called "twilight" territory between the base prices of two mill districts. It is stated that now Chicago mills may extend their market territory to a point east of Detroit and farther with more advantage than heretofore.

The economic theory upon which the cease-and-desist order of the commission was built holds that a delivered price is not the price of a commodity, but it is steel plus freight service, which makes a different commodity and does not enjoy full competition in a market. An f.o.b. mill price, it is held, must be a requisite for a free market, inasmuch as a delivered price constitutes something of a number of markets in which there are two commodities—steel and freight.

Testimony of the university economists in the Pittsburgh plus proceedings was to the effect in part that the nearest approach to a practicable plan in the steel industry for purchasers to bring economic pressure upon the producers would be to abolish the delivered price and to substitute a mill base price. In this way, it was stated, purchasers then would know what their competitors were paying at the mill base and naturally would bring such pressure on the steel producers as would assure not many variations from the mill base price.

A comparatively true market condition, it was stated, would be a mill base price that would vary with conditions, but without any agreement or understanding, and which would give the same price to all purchasers of the given mill.

Attorney K. E. Steinhauer, who directed the prosecution of the Pittsburgh plus case against the Steel corporation as attorney for the commission, left the trade commission last Friday to become manager of a bond and mortgage house in Los Angeles. His resignation bears no significance to the Pittsburgh plus case, as Mr. Steinhauer was desirous of leaving government service to enter private business.

Buy Heating Furnaces

Orders for electric heat treating furnaces recently have been received by the American Metallurgical Corp., 168 Dartmouth St., Boston, Mass., as follows: A lead pot furnace, Pratt & Whitney Co., Hartford, Conn.; an annealing furnace for handling nickel silver, Hookless Fastener Co., Meadville, Pa.; air heater, F. N. Burt Co., Ltd., Buffalo; electric central oil heating system for tempering hack saws and band saws, American Saw & Mfg. Co., Springfield, Mass.; one heat treating furnace each for the Clayton Mfg. Co., Bristol, Conn., and the De Laval Separator Co., Poughkeepsie, N. Y.; and one 20-kilowatt electric pot furnace for the Cushman Chuck Co., Hartford, Conn.

Stacks Break Records

Birmingham, Ala., Nov. 10.—Several blast furnace records were broken in October in the Birmingham field. The Tennessee Coal, Iron & Railroad Co. produced 172,925 tons of pig iron, compared to 127,864 tons in March, 1923. Ensley blast furinace No. 1 produced 19,451 tons of iron against 18,310 tons in March, 1923, while one of the Bessemer furnaces produced 12,446 tons against 11,631 tons in April, 1922. The single furnace of the Central Iron & Coal Co. at Holt, Tuscaloosa county, not only broke a record as to production but as to quality. The make at this point was 10,367 tons the best previous record being September, 1922, when 10,352 tons were produced. The furnace has been in blast 802 days, and the coke consumption per ton averages 2614 pounds.

Current Statistics of Industry

Locomotive Orders Gain

Washington, Nov. 11.—Unfilled orders of locomotives for domestic and export shipment continue to mount, the total on Oct. 31 being 462 as compared with 386 at the end of September and 361 at the end of August according to reports to the department of commerce. Shipments during October totaled 96 a drop of eight from the preceding month. Domestic shipments were 78 in October as compared with 79 in September. Following is a comparison of orders and shipments:

Year and month	Shipment— Total	Domes.	Unfilled orders Total	Domes.
1920 monthly ave.	199	110	1,323	894
1921 monthly ave.	112	69	337	206
1922 monthly ave.	106	88	889	791
1923 monthly ave.	266	249	1,592	1,513
1924				
January	151	147	376	344
February	99	92	499	466
March	132	128	534	494
April	73	63	640	586
May	111	93	643	589
June	145	134	531	462
July	140	130	483	416
August	139	121	361	306
September	104	79	386	333
October	96	78	462	398

Sheet Wage To Be Lower November-December

Youngstown, Nov. 11.—Bi-monthly examination of the sales sheets of independent sheet and tin plate makers affiliated with the Amalgamated Association of Iron, Steel and Tin Plate Workers shows an average of 3.45c for black sheets of 26 to 28 gage. The former average was 3.50c, the new rate being $1 lower.

This fixes wages of sheet and tin mill workers at 39 per cent above base, compared with 40½ per cent previously. The volume of sales examined at this time was larger than two months ago. The average was based on an f.o.b. mill price, as previously, the change from the Pittsburgh basing point in making quotations thus having no effect on the computation.

Comparison of the recent bi-monthly periods are as follows:

November-December	3.35c	— 1½	per cent
September-October	3.50c	— 3	per cent
July-August	3.60c	— 3	per cent
May-June	3.70c	— 1½	per cent
March-April	3.75c		unchanged
January-February, 1924	3.75c		unchanged
November-December	3.75c	+ 1½	per cent
September-October	3.70c	+ 3	per cent
July-August	3.60c	+ 6	per cent
May-June	3.40c	+ 3	per cent
March-April	3.30c		unchanged
January-February, 1923	3.30c	+ 3	per cent
November-December	3.20c	+ 4½	per cent
September-October	3.05c	+ 4½	per cent
July-August	2.90c	+ 3	per cent
May-June	2.80c		unchanged
March-April	2.80c		unchanged
January-February, 1922	2.80c	+ 1½	per cent
November-December	2.75c	—10½	per cent
September-October	3.10c	—15	per cent
July-August	3.85c	— 3	per cent
May-June	3.95c	—10½	per cent
March-April	4.30c	—25½	per cent
January-February, 1921	5.15c	—19½	per cent

Wheeling Steel Reports Loss for Quarter

The Wheeling Steel Corp., Wheeling, W. Va., reports net loss for the quarter ended Sept. 30, 1924, of $430,856, after depreciation and other charges. This compares with net loss of $170,985 in the preceding quarter and net profit of $1,214,142 in the third quarter of last year. The income account for the third quarter of 1924 compares with that for the third quarter of 1923 as follows:

	1924	1923
Total income	$ 769,077	$2,283,203
Depreciation and exhaustion of minerals	797,283	717,665
Interest	402,650	351,396
Net loss	$ 430,856	*$1,214,142
Pfd. A & B dividends	662,078	.....
Deficit	$1,092,934	.....

*Profit.

Index to Business Trend Charts

THIS ISSUE

Subject	Page
Blast Furnace Index	1294
Pig Iron Situation	1294
Car Orders	1295
Railroad Earnings	1295
Freight Car Movement	1296
Iron and Steel Price Parity	1896

REFERENCES

Employment Index	Nov. 6
Foreign Exchange	Nov. 6
Independent Sheet Situation	Nov. 6
Index of Basic Production	Nov. 6
Iron and Steel Foreign Trade	Nov. 6
Automotive Production	Oct. 30
Coal Index	Oct. 30
Monthly Coke Output	Oct. 30
Security Prices	Oct. 30
Structural Awards	Oct. 30
Wage Situation	Oct. 30
Building Construction	Oct. 23
Business Index	Oct. 23
European Conditions	Oct. 23
Foreign Trade	Oct. 23
Gold Movements	Oct. 23
Bradstreet's Index	Oct. 16
Monthly Ingot Production	Oct. 16
Steel Orders	Oct. 16
Bonds and Interest	Oct. 9
Corn and Wheat Prices	Oct. 9
Farmer Purchasing Power	Oct. 9
Building Cost Index	Oct. 2
Steel Price Index	Oct. 2
Commercial Failures	Sept. 18
Foundry Pig Iron	Sept. 11
Merchant Pig Iron	Aug. 28
Bank Clearings	Aug. 7
Steel Castings Bookings	Aug. 7
Wholesale and Retail Prices	July 3
Steel Wages and Prices	July 24
Electric Power Production	July 31
Mail Order Sales	May 8
Monthly Commodity Prices	March 13

Beehive Coke Production Shows Recovery

Washington, Nov. 10.—Production of beehive coke recovered somewhat in the week ended Nov. 1, says the geological survey. Reports from the coke carriers on the number of cars loaded indicate that the total output was approximately 150,000 net tons, an increase of 10,000 tons. Appreciable improvement occurred only in Pennsylvania and Ohio. The cumulative production of beehive coke during 1924 to date now stands at 8,161,000 tons, a decrease, when compared with the corresponding period of 1923, of 7,713,000 tons, or nearly 50 per cent. The report by districts in net tons follows:

	—Week ended— Nov. 1, 1924a	Oct. 25, 1924	Nov. 3, 1923
Pennsylvania and Ohio	109,000	100,000	213,000
West Virginia	8,000	8,000	15,000
Alabama, Kentucky, Tennessee and Georgia	15,000	16,000	17,000
Virginia	9,000	8,000	11,000
Colorado & New Mexico	5,000	4,000	6,000
Washington & Utah	4,000	4,000	4,000
United States total	150,000	140,000	266,000
Daily average	25,000	23,000	44,000

(a) Subject to revision.

The week ended Nov. 1 witnessed a reduction in the output of soft coal to 10,091,000 tons. This decline of 2 per cent from the preceding week was due to the partial observance of All Saints day as a holiday.

Unfilled Tonnage Makes Another Gain

Unfilled bookings of the United States Steel Corp., as of Oct. 31, have again advanced, the total amounting to 3,525,370 tons. This is a gain of 51,490 tons or 1.48 per cent, and brings the total for October up to the highest point since May. Further comparisons follow:

Date	Total	Change, tonnage	Change, per cent	
Oct. 31, 1924	3,525,270	51,490	+ 1.48	+
Sept. 30, 1924	3,473,780	184,203	+ 5.59	+
Aug. 31, 1924	3,289,577	102,505	+ 3.02	+
July 31, 1924	3,187,072	75,433	— 2.3	—
June 30, 1924	3,262,505	365,584	—11.1	—
May 31, 1924	3,628,089	580,358	—13.79	—
April 30, 1924	4,208,447	574,360	—12.008	—
Mar. 31, 1924	4,782,807	130,094	— 2.6	—
Feb. 29, 1924	4,912,901	114,472	+ 2.3	+
Jan. 31, 1924	4,798,429	350,183	+ 7.8	+
Dec. 31, 1923	4,445,339	76,755	+ 1.7	+
Nov. 30, 1923	4,368,584	304,241	— 6.5	—
Oct. 31, 1923	4,672,825	362,925	— 7.2	—
Sept. 30, 1923	5,035,750	378,913	— 6.99	—
Aug. 31, 1923	5,414,663	496,100	— 8.4	—
July 31, 1923	5,910,763	475,498	— 7.4	—
June 30, 1923	6,386,261	595,090	— 8.5	—
May 31, 1923	6,981,351	307,158	— 4.21	—
April 30, 1923	7,288,509	114,823	— 1.5	—
Mar. 31, 1923	7,403,332	119,343	+ 1.63	+
Feb. 28, 1923	7,283,989	373,213	+ 5.40	+
Jan. 31, 1923	6,910,776	165,073	+ 2.31	+

The Business Trend

November 13, 1924

BY JOHN W. HILL, FINANCIAL EDITOR

BUSINESS and financial sentiment has been deeply stirred by the Republican landslide. In the stock market, securities have leaped into exuberant activity. From industry there has come an outpouring of enthusiastic statements as well as actual encouraging events.

This demonstration does not mean that the election has conjured up prosperity. It does mean that the shadow of political quackery across the business horizon has passed. The country has shown overwhelmingly that it will not countenance progress by revolution.

The effect has been profoundly reassuring to business enterprise and to investment capital. It seems certain that there will be no political tinkering with the economic order for years to come. Progress must come by evolution.

As a result, the recent political restraint upon business psychology has been removed. Buyers are displaying quickened interest and pent-up orders in some lines are being released. The constructive economic forces which have been steadily making for business recovery since last July may now operate more freely.

Forces Are Powerful

These forces are few in number but they are potent. They consist of cheap money, of agricultural prosperity, of a reviving Europe and of an enormous domestic productive, consumptive and purchasing power.

At no time in recent years have conditions been more emphatically favorable for a period of sustained prosperity. This does not mean that a boom is imminent. Fortunately that does not appear to be the case, despite the abundance of money. Inflationary tendencies may be dampened by higher loan rates as loans expand.

Europe's gain is measured by strong exchanges. Sterling is still advancing. Of great significance, the new German mark has appeared on the exchange market and it is quoted at a slight premium over the dollar.

Stock Sales Large

Transactions on the stock exchange since the election have swollen to the largest volume since 1919. The totals have been equaled only a few times in the past. The average of 50 industrial and rail shares at the close of last week had scored a new high for the year.

Industrial shares gained, but chief interest was centered upon the rails. This is because of their huge record-breaking traffic, their increasing earnings and the fact that government ownership has been buried by an avalanche of votes.

In the commodity markets firmness is spreading. Wheat has rebounded nearly to the year's high mark. Fuel oil and metals are stronger. Iron and steel are less weak. R. G. Dun's index number for Nov. 1 was the highest since January, 1922.

The Barometer of Business

Weekly Comparison

	Last week	Week before	One mo. ago	One year ago	1913
Business Failures ..	332	364	355	383	...
Cash ratio Fed. Res. System %..	78.2	78.6	78.0	76.4	...
Loan Rate, 4-6 mos. N. Y. %	3-3¼	3-3¼	3-3¼	5-5¼	5¼
Aver. price 25 industrial shares ..	$120.63	$119.10	$115.85	$105.44	$58.19
Aver. price 25 railroad shares	$74.77	$70.48	$68.74	$58.30	$82.97
Av. price 40 bonds	$82.00	$81.27	$81.00	$76.52	$93.00
Car loadings week ended Oct. 25..	1,112,345	1,102,336	1,087,447	1,073,965	1,008,818
Bank Debits 246 cities (000 omitted)	$10,448,042	$9,860,043	$10,123,659	$9,364,400	.....

*1920.

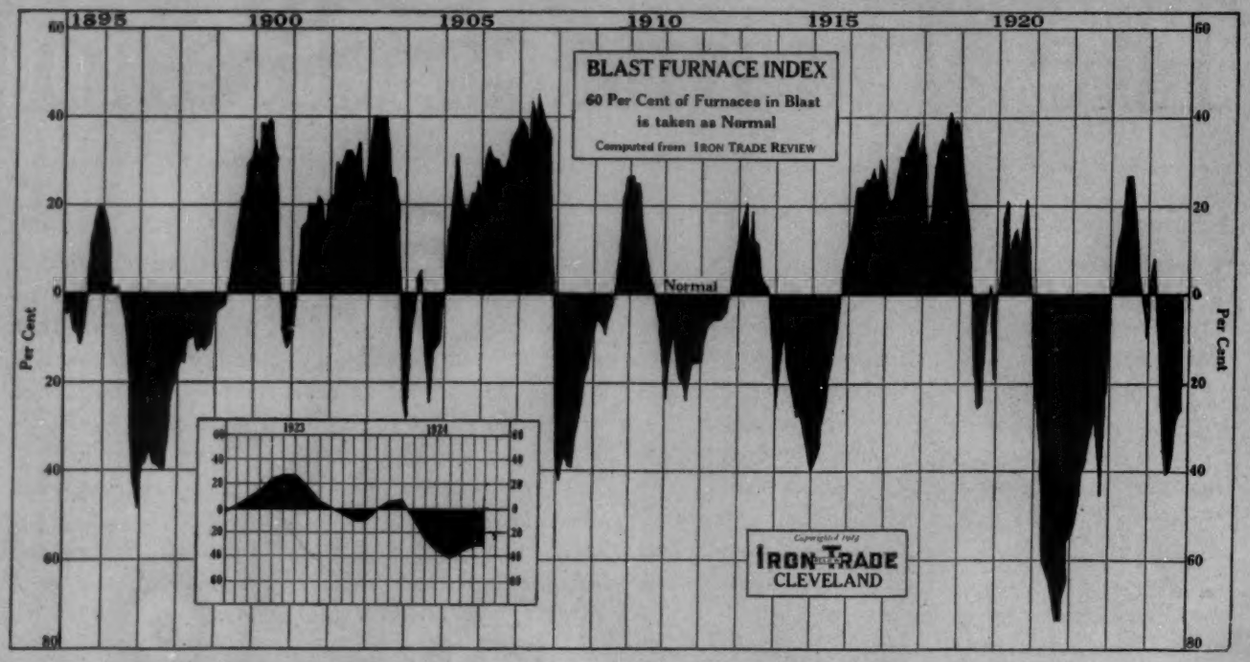
Foreign Exchange (Demand)

	Normal	Last week close	One week before	One month ago	One year ago
Sterling	$4.86	$4.59	$4.54	$4.48	$4.38
Francs	19.3c	5.24c	5.25c	5.17c	5.58c
Lira	19.3c	4.30c	4.36c	4.36c	4.37c

Monthly Comparison

		One Month before	One Year ago	1913 Mo. average
Dodge Building awards in 27 states (sq. ft.)	*43,452,700	41,852,000	39,391,200	31,250,000
Business failures: Number	1,696	1,306	1,673	1,336
Liabilities ..	$36,098,804	$34,296,276	$79,301,741	$22,732,000
Exports	*$427,000,000	$331,600,000	$381,400,000	$233,195,000
Excess of gold imports	*$1,975,840	$15,752,524	$26,941,264	†$630,716
Bureau of labor price index..	*148.8	149.7	153.7	100
Bradstreet's price index	144.4	140.6	142.1	100
Economist's British price index	178.4	174	159	100
Nat'l Industrial Con. board living cost index	*161.7	161.7	161.9	‡100
New incorporations	$543,490,000	$478,680,000	$651,577,000	$49,301,000
Railroad net earings	$116,000,000	$95,415,300	$92,426,800	$59,301,000

†Excess of gold exports. ‡July, 1914 *September.

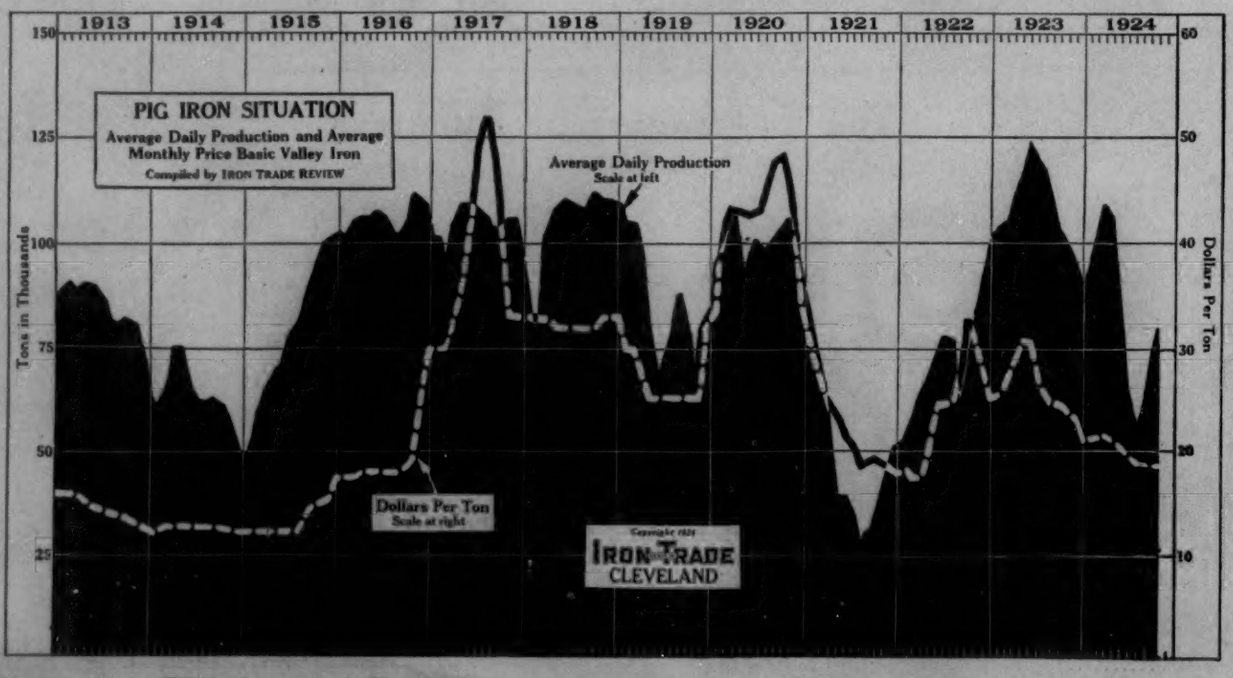


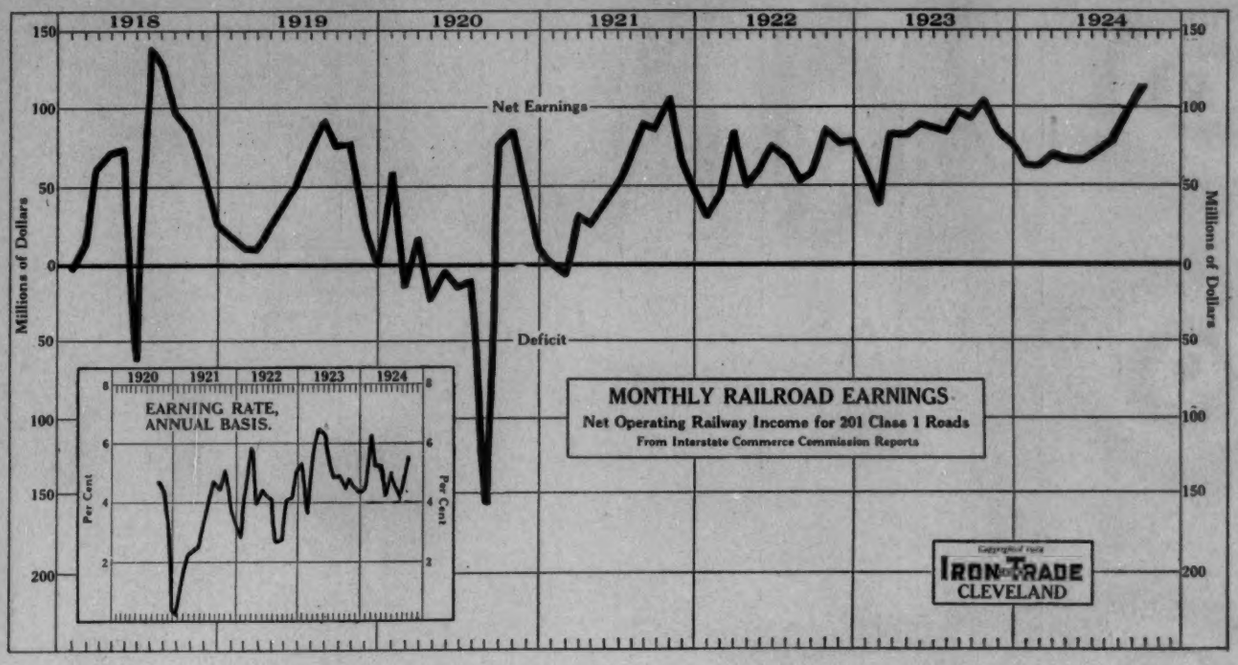
Blast Furnace Index

THE blast furnace index devised recently by Col. L. P. Ayres of the Cleveland Trust Co., continues to move upward. When 60 per cent of all the country's blast furnaces are active general business is at a normal level. In July the index declined to 41 per cent below this computed normal. August brought some recovery, which was succeeded by a sharp gain to 30 per cent below normal in September. In October the index gained further to 26 per cent below normal. Of a total of 411 furnaces 182 were in blast on Oct. 31.

Pig Iron Situation

THE average daily output of pig iron in October was 79,401 tons. This was an increase of 16 per cent over the average of 68,454 tons for September. It was 38 per cent greater than the bottom level of the year of 57,531 tons in July. The October output was the greatest for any month since last May. The increase of eight in the number of active furnaces last month was divided evenly between merchant and steel works furnaces. The average price for basic iron in October was unchanged but firmness is appearing.



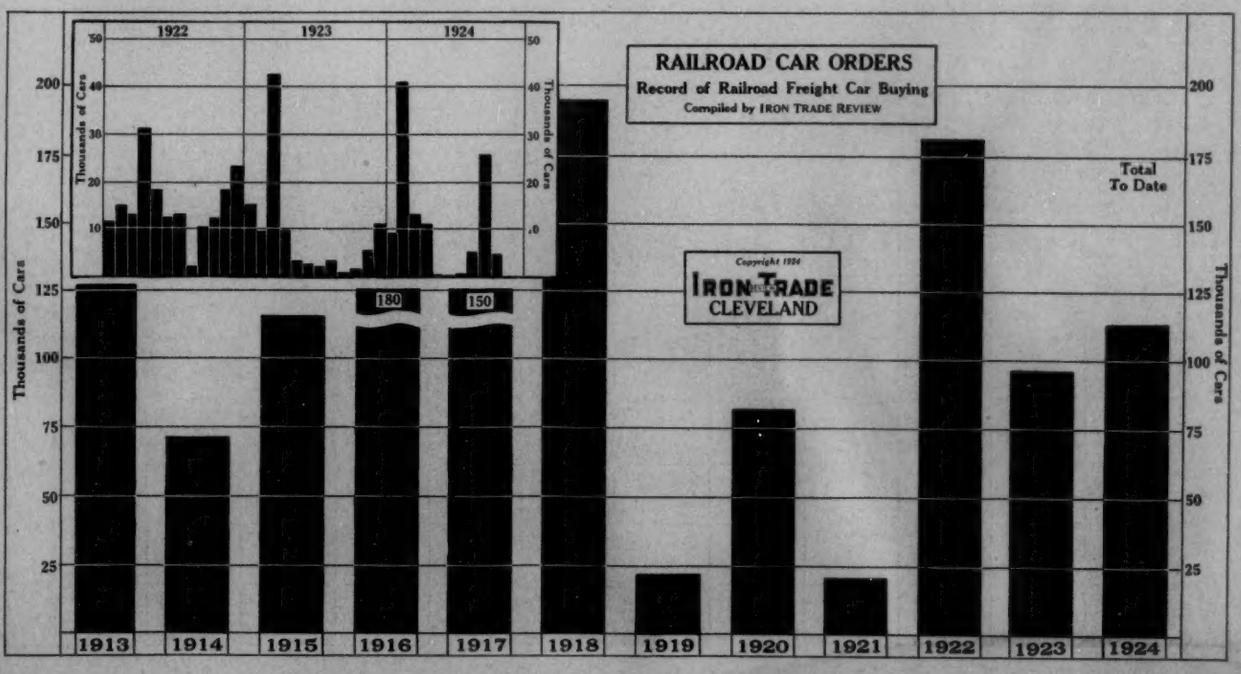


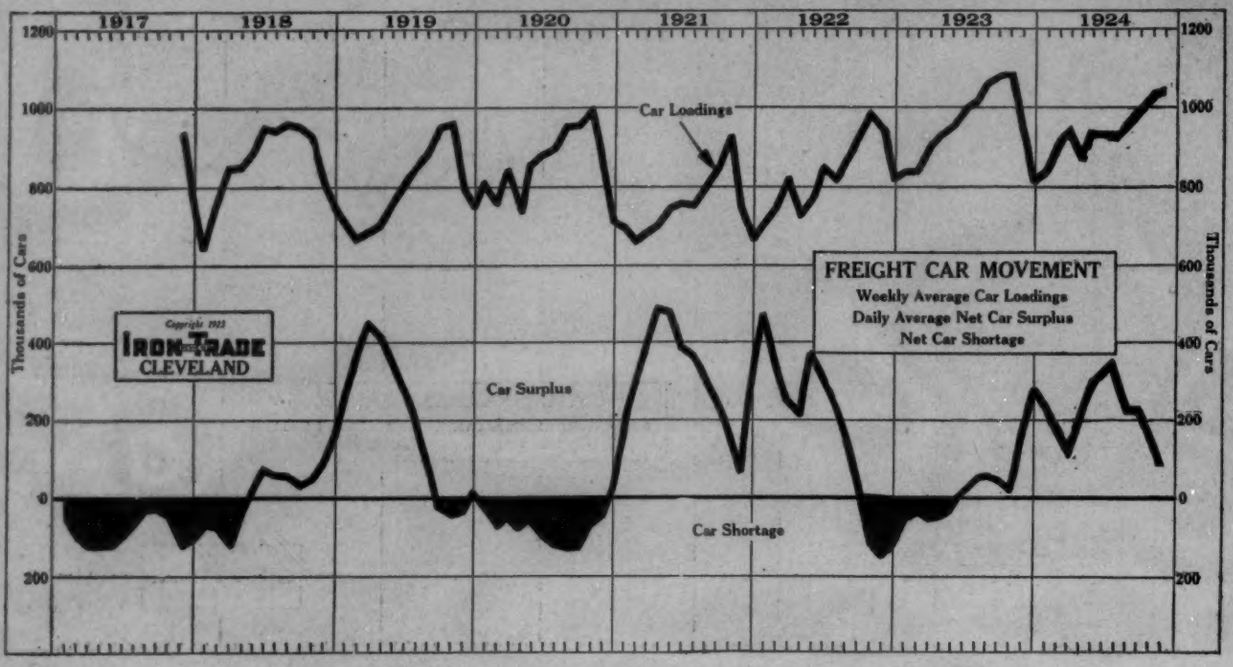
Railroad Earnings

THE railroads are beginning to see the benefits from the large traffic totals and from their efficient operation and improved plant. For September first class roads report a net income of $116,000,000. This compares with $95,415,000 for August and with $92,426,000 in September, 1923. The total is the largest for any month since July, 1918. The computed return on property valuation in September was 5.57 per cent. The return for nine months of 1924 was 4.21 per cent against 4.62 per cent for the same period of 1923.

Car Awards

ALTHOUGH the number of inquiries for freight cars in October were high, the actual awards placed numbered only 4883. The figure compared with 27,634 orders in September and with 1125 in October, 1923. The decline in car buying in the face of rapidly expanding traffic and good earnings probably reflects the holding back of business until after the election. November's total should see a gain. For the 10 months to Nov. 1 the roads have purchased 113,232 cars against 87,837 in the same period of 1923.



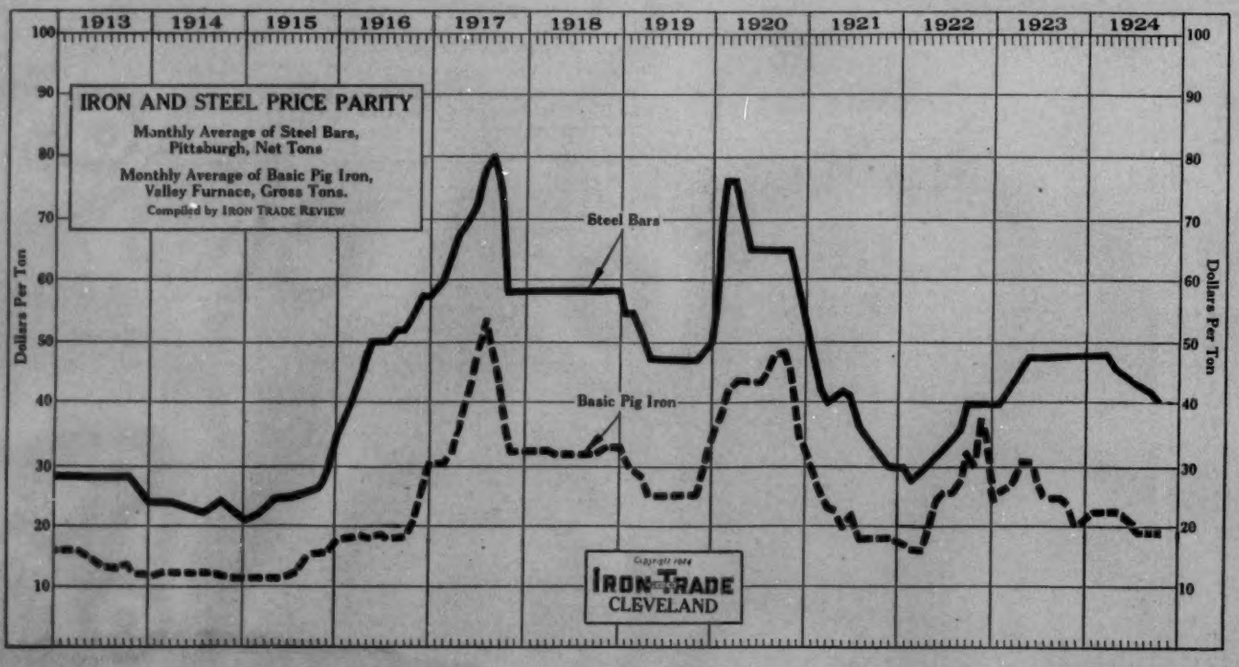


Freight Movement

IN THE week ended Oct. 25 the country's railroads made the second consecutive high record for car loadings for all time. The total was 1,112,336 cars. The striking feature of the showing is that it is being accomplished with no congestion or car shortage. The demand for transportation, however, has caused the huge volume of idle cars of last summer to shrink from more than 350,000 cars to about 95,000 cars. The cars in reserve give a margin against shortage and reflect the road's efficiency.

Steel Price Parity

ALTHOUGH the demand for iron and steel and the production of these products have been increasing since July, prices have continued soft. This is a familiar phenomenon in the initial stages of a recovery following a sharp slump in the industry when competition for business is extremely keen. This year the abandonment of Pittsburgh plus helped to keep prices unsettled. Recently the markets have broadened and both pig iron and steel bar prices are firmer, though this was not reflected in the averages for October.



Fire Clay Is Farm's Best Crop

Goose Lake, Hunters' Paradise, Drained for Agricultural Purposes, Yields Great Deposit of Good Refractory Material—Modern Mill Erected To Supply Central West

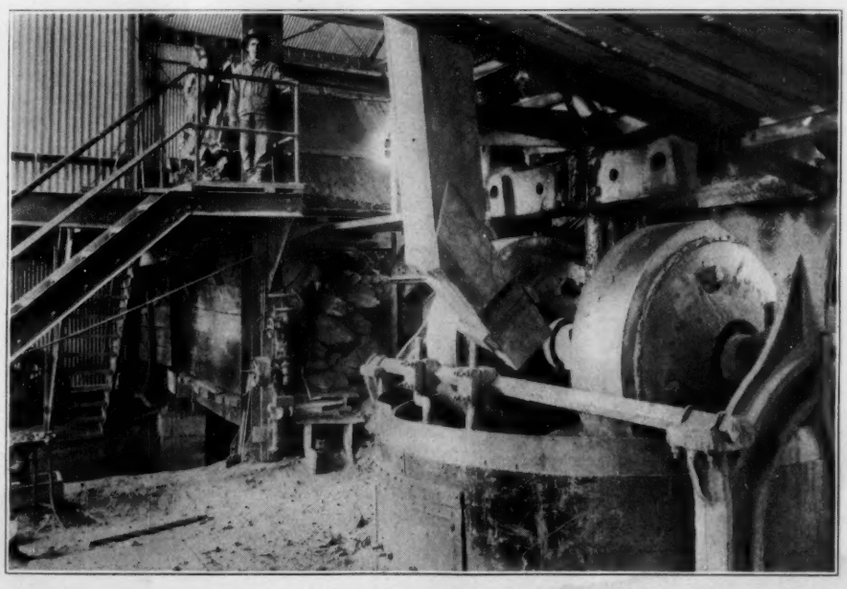
THE refractories industry is said to be less progressive than some others that are affiliated with iron and steel, in adopting modern methods for handling materials. The average fire brick plant has equipment much the same as that which was installed a generation ago. In the raw material department especially, mechanical devices have not been employed to the extent to which they are utilized in the modern plants that prepare large tonnages of ore, or rock products, for manufacturing processes.

The opening of a new fire clay deposit near Joliet, Ill., has offered an opportunity for building a clay grinding and loading plant along lines somewhat different from those in general use by the refractories industry. Utilizing 12 years previous experience in the same line of fire clay production, the Illinois Clay Products Co. decided to follow the design of building and mechanical equipment as used for modern stone crushing and boilerhouse plants. With the recent increase of iron and steel production in the Chicago district, has come a considerable demand for plastic fire clay for the laying of fire brick, and for daubing and patching mixtures. During normal operation in the iron and steel industry it has been estimated that over 500 tons of fire clay are consumed daily for this purpose. About 300 tons of plastic fire clay also are required daily for the manufacture of terra cotta and allied clay products in the district.

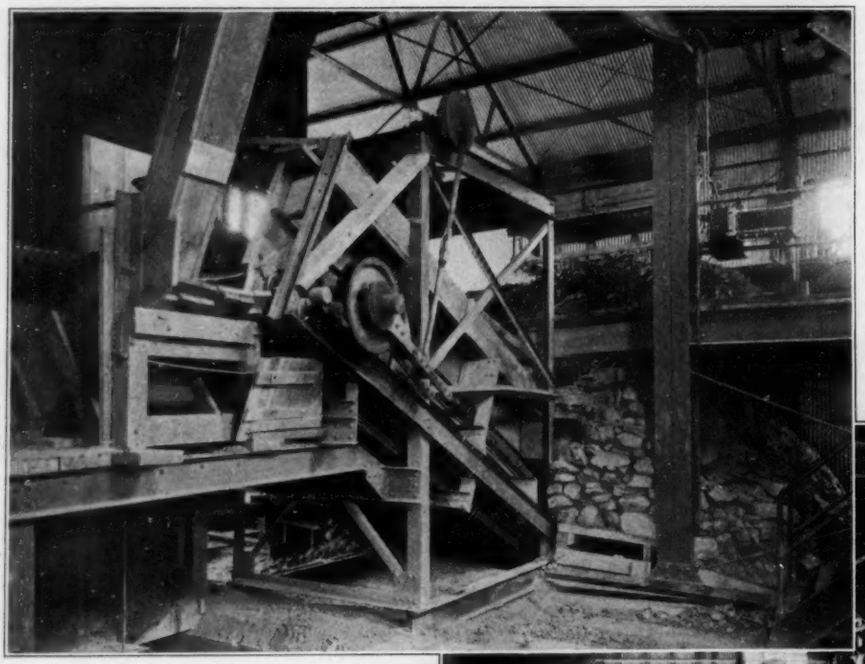
The clay deposit is located on the Chicago outer belt line railway 55 miles from Chicago, and 18 miles southwest of Joliet. The characteristics of the clay and its accessibility indicate that it may become an important factor in the Chicago district.

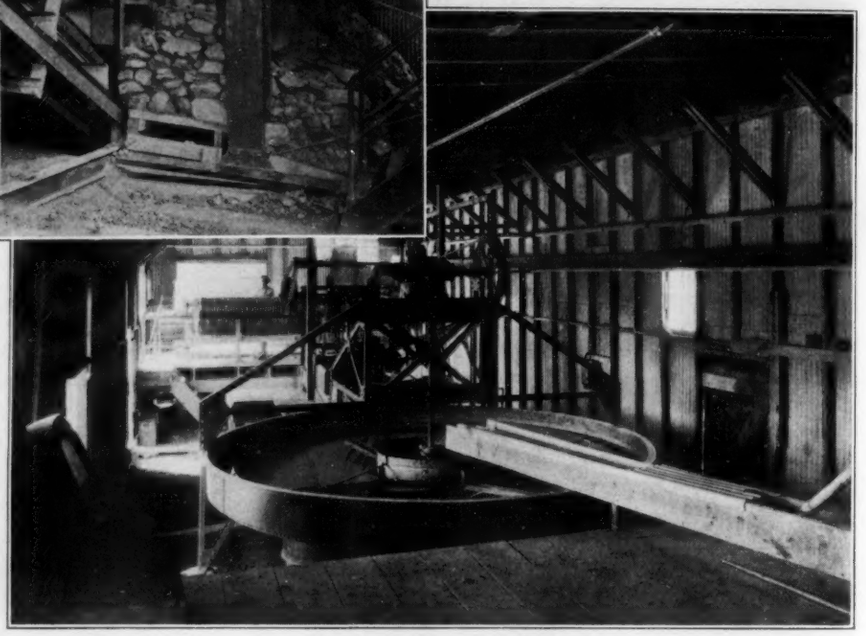
The deposit was discovered in an interesting manner. Since northern Illinois was first settled, a large swampy body of water in eastern Grundy county was known as Goose lake. Being located in an isolated region near the junction of the Kankakee and the Illinois rivers, it was attractive for wild fowl. It also attracted hunters for miles around and some of the older leading citizens of Chicago belonged to a gun club on the edge of Goose lake.

A few years ago, an enterprising Scotchman purchased the Goose lake property, and succeeded in draining it with the expectation of getting rich farm land, as usually found under these conditions. But the lake bottom was found to be mostly a peat bed with many bare white spots upon which nothing would grow. It seemed that the venture was a failure until curiosity led him to discover that instead of a dirt soil, the lake bed was mostly a light colored plastic clay. Further investigation proved this to be high grade fire clay 20 feet or more in depth. The clay is a deposit in what apparently is the Pottsville formation of the early Pennsylvania rocks in the Ordovician strata, which is a somewhat unusual geological location for plastic fire clay deposits. The clay is so free of pyrites, slate and rock impurities that only 2 or 3 per cent residue is left after washing it through a 200-mesh sieve. The lime, sul-



FRONT VIEW OF CLAY GRINDING PAN





REAR VIEW OF DRY PAN AND CLAY FEEDER; AND, BELOW, THE CLAY WASHING MACHINE

phur and magnesia elements total under 1.5 per cent. The loss on ignition is about 6 per cent. The fusion point is above 3000 degrees Fahr.

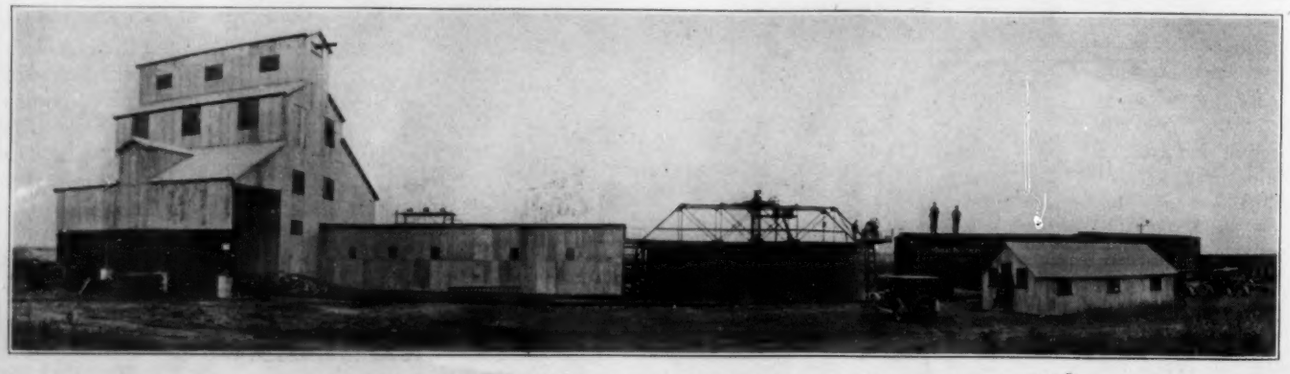
The clay is obtained from the open pit and is loaded by steam shovel into 4-yard side dump cars, which are hauled up an inclined trestle track to the second floor of the main building by a 60 horsepower geared electric hoist. It is dumped on the rear end of a steel apron feeder 38 inches wide and 21 feet long, driven by a 7½ horsepower motor. The rate of feed can be regulated through an adjustable crank rod ratchet drive, and also by push button control of the motor. The special purpose of the feeder is to secure a uniform supply of clay to the dry pan, and so avoid choking and uncertain operation.

The clay is discharged from the upper end of the apron feeder on to a chute that feeds into an 8½-foot dry pan. The clay drops in between two extra heavy rollers, each weighing 6 tons, and is crushed so as to drop through ¼-inch slots in the manganese steel screen plates of the pan bottom. The false bottom plates and the roller tires of this pan also are of manganese steel to resist the severe wear. The dry pan is belt driven by a 75 horsepower motor.

The crushed fire clay drops through the pan bottom and is dragged around to one of two openings, where it falls down into a pivoted bucket conveyor that runs through a tunnel, directly under the dry pan foundation. This conveyor is made up of 90 30 x 36-inch malleable iron buckets, that convey and elevate the crushed clay 65 feet to a gallery across the top of the building, and discharges it over a traveling tripper on to the clay screens below. The conveyor is operated by a 25 horsepower motor through a silent chain drive.

Since only about 25 per cent of the clay as crushed in the dry pan is fine enough to go through the screens, a large quantity of tailings is continually circulating between the screen and pan along with the feed of raw clay. Plastic fire clay is often damp enough to stick to the buckets of the belt elevators generally used to lift clay from the dry pans to screens, and even with oversize elevator capacity, there is much trouble from clogged buckets and clay spilled around the elevator boot. The pivoted bucket conveyor with its low maintenance expense, seems to warrant its higher first cost by eliminating the delays from clogging and the high cost of frequently renewing the belt and buckets of a belt elevator. It also permits discharging the clay into several different bins by means of the traveling tripper device.

On the third floor of the building there



ANOTHER VIEW OF THE FIRE CLAY MILL AT GOOSE LAKE

are screens which separate out the fine clay that drops into the storage bins underneath. At present there is installed one screen of 40 square feet area and one screen of 20 square feet area, through which pass in one hour 35 to 40 tons of approximately 15 mesh product. This finely ground clay drops into a suspended hopper bin of novel design. The bin floor is made of wood planks carried by steel straps hung from the girders above. Each bin holds about 150 tons of storage clay and discharges easily into the bottom chutes. Most of the fine ground clay is delivered by a chute into the center of the box cars, where a box car loader throws it to the ends of the car without any hand shoveling. At least one ton of clay per minute can be loaded into the car with this machine.

Because of the pyrites, coal, slate and other foreign matter that is found in nearly all plastic fire clays, a demand has developed for washed fire clay, in which these impurities have been removed by some kind of a wet screening process. The method of clay washing in general use by potteries, etc. has been to dissolve the fire clay in tanks with a revolving paddle. This clay slurry is screened through shaking or revolving screens that take out the particles that will not pass through the 40 to 60 mesh sieve cloth generally used. The slurry is then pumped into large settling tanks and after standing a day or so, is pumped into filter presses that puts the clay in the form of mud cakes containing about 20 per cent moisture.

An effort has been made to improve on that method. The washing department of the plant dissolves the fire clay in a clay washer, which is a long steel cylinder 3 feet in diameter, with a shaft through it, and many cross rods that disintegrates the clay into a soluation of about 90 per cent water and 10 per cent clay. This thin clay slurry flows into a classifier with a 12-foot diameter bowl, with revolving scrapers that automatically overflow the clay in suspension that will pass through a 200 mesh sieve. The undissolved clay and foreign matter drop to the bottom of the bowl and travels up on an inclined chute against a mechanical rake action, and the residue is discharged from the end . The clay slurry from the overflow section is pumped into a thickener tank 50 feet in diameter and 14 feet high, holding some 180,000 gallons. From the cone bottom of this tank the clay slurry containing about 50 per cent water is pumped by a pressure diaphragm pump into a filter press with 72 plates each 32 inches square. The screening and settling apparatus has a capacity of about 5 tons per hour of dry clay product, which is unusually fine grained and pure.

The plant was planned by Otis L. Jones, president, IIIlinois Clay Products Co. The design and engineering work was in charge of the J. C. Buckbee Co., Chicago.

Use of Scrap Conserves Raw Materials

BY E. J. LOWRY

THE increasing use of scrap in the iron and steel industry promotes the conservation of our natural resources. Incidentally, its utilization gives a greater production per unit of time at less cost, in itself a worthwhile consideration, but it is as a conserving agency that scrap lays claim to a leading place in our national economy. Every ton of scrap consumed in the manufacture of steel saves a definite amount of raw materials. The reclamation of used materials, therefore, assumes a position of heretofore unmeassured importance in this industry.

Scrap is of all descriptions, weights and analyses. But without regard for metallurgical considerations, it is shipped to the consumer upon specifications of untrue value. Grades, such as heavy melting, busheling, etc., are the governors and the dimensions are usually specified as "charging box," or "shoveling" size, etc. Such descriptions do not fit the requirements of the present time and perhaps form an impediment to the growth of the use of scrap in the manufacture of steel. Today, scrap is looked upon in the light of its name, whereas it should be evaluated on the basis of its ability to return economy and perfection to the consumer. For the legitimate future of the scrap business, it is essential that metallurgical adaptions be set forth as a requisite to an orderly progress.

From a paper delivered before the American Iron and Steel institute at New York, Oct. 24. The author is metallurgist for Hickman, Williams & Co., Chicago.

The interest in iron and steel scrap is not wholly confined to the foregoing. It covers also the question of statistics and the internal mechanism of the trading in this material. The scrap business has grown from nothing to a position comparable to any of the other industries producing basic raw materials. Through this growth practices were formed which affect the buyer and seller alike. These practices, having grown empirically, embrace both good and bad business ethics. The bad possibly offsets the good and holds the scrap business below the level to which it deserves to rise.

Scrap is purchased on mill specifications. It is shipped in accordance with these guides. The shipments, however, are governed, more or less, by the experience of the dealer with the consuming mills. It is the latter which really governs the quality of the scrap shipped. This condition is brought about because of the anomalies existing in the present specifications.

The grade, "No. 1 heavy melting steel," is covered by mill specifications. Those in existence today do not serve the purpose for which they were originally written. Instead of serving as a direct guide to the quality of scrap which might economically be used in the various mills, they are a subterfuge under which all grades of steel scrap, not especially described, may be shipped.

As an illustration of this, the following typical specification for No. 1 heavy melting steel has been taken as evidencing the inadequacy of such scrap descriptions.

"Railroad steel, such as axles, angle bars and splices, couplers and knuckles, cut steel bolsters, coil and leaf springs (all coil springs to be of ½ inch or larger diameter steel), crop ends from billets, blooms, sheet bars, structural shapes, rods, bars and plates (not needle or skeleton scrap), draw bars, heavy forge scrap, butts, rail ends and new mashed pipe ends (original diameter 4 inches and over, thoroughly flattened), oil well drill stems, bits and jars, clean iron and steel No. 2 wrought, car body plate ¼ inch and heavier when cut 12 x 12 inches."

The above is a composite of the heavy melting steel classification used by mills throughout the country. If this specification were analyzed, the following would be apparent.

1. Many of the kinds of railroad scrap listed are now sold as special grades of steel and bring a premium over the regular heavy melting grade. These special grades shown are: Coil and leaf springs, couplers and knuckles, draw bars and steel axles.

2. Some of the scrap steel included in the specification would be sold as low phosphorus grades. These also bring a premium over heavy melting steel and therefore would not be shipped on such orders. Exclusive of the railroad grades, the low phosphorus scrap shown are: Forging steel scrap, plate scrap, oil well drill bits, jars and stems.

3. Some of the kinds named in the classification come under the grades

used by gray iron and malleable iron foundries: Angle and splice bars and rail ends (3 feet and under).

4. Eliminating "crop ends of billets, blooms, sheet bars, etc." from consideration, due to their being an intermittent source of scrap for the average dealer, the following grades remain, which actually are disposed of constantly as heavy melting steel: Cut steel bolsters, rods and bars, structural shapes, new mashed pipe (original diameter 4 inches and over, thoroughly flattened) and cut car sides (12 x 12 inches).

The heavy melting steel specification is insufficient for mill purposes, but it proves adequate to the dealer who has an intimate knowledge regarding the class of scrap acceptable to a given mill. It, however, often works against him in the form of rejected cars. This not only applies to the dealer with a yard, but to the broker who is handling the cars for the dealer's account.

Many Special Grades Used

The blast furnace, the acid open-hearth, the electric furnace, the converter, crucible, cupola and malleable foundries, and in some instances the basic open-hearth plants are consumers of special grades of scrap iron and steel.

The blast furnace is an important consumer of some grades of scrap. The tonnage used is on the increase. Blast furnaces are looking into the use of scrap, more and more. The reason for this is obvious when one considers that without additional fuel, the total burden may be increased five to eight per cent with "free" melted scrap. The report of this institute shows an average consumption of 0.135 tons of scrap, scale, cinder, etc., out of 1.933 tons of metallic material required to make one ton of pig iron in 1923. The grades of scrap, used today in blast furnaces, are cut annealing pots, borings, short turnings and bushelings. The use of scrap in a blast furnace is not one of metallurgical reactions, but constitutes a regular melting condition.

The acid open-hearth melters have more or less severe problems to meet. Consequently, their specifications have been constantly revised to take care of the existing exigencies of the times. They, too, have neglected, however, the effect of the weight per cubic foot in comparison with lineal dimensions. This factor is not so important to them because their tonnages are markedly smaller than the big basic furnaces.

The demand on the scrap market for low phosphorus grades for acid open-hearth use has been fairly constant during the past few years. The kinds of steel scrap adaptable to such use cover not only the low phosphorus material, but the railroad specialties and automobile forging stock, which appears on the market from time to time. These grades take a premium over the regular run of scrap. The purchasing agents for such melters have recognized that quality exists even in scrap and are willing to pay the added cost.

The converter and crucible foundries have, through their years of experience, learned that certain grades will lend themselves to their requirements. Naturally, the specifications covering the purchase of their scrap have a very definite purpose.

The same holds true for those basic open-hearth plants which require special grades in the manufacture of their products. These are the plants which are operating on very high percentages of scrap. In one instance where the furnace charge is upward of ninety per cent scrap, the plant is an important consumer of couplers and knuckles. The ease of operating to a definite analysis when good quality materials, such as the aforenamed, are used, is obvious.

Then, there is the gray iron foundryman who, during the past few years, has been disillusioned. He had long supposed that good gray iron castings required "at least 50 per cent pig iron." Today, by proper operation, good castings are produced with 100 per cent scrap. A striking illustration of this advancement is the chilled iron car wheel manufacturer. There is a general tendency toward the use of special grades of scrap in the production of gray iron castings. Such prepared grades are an economy to the consumer.

Process Uses All Scrap

One of the most interesting scrap consuming developments of the past few years is the Kranz process for the production of malleable iron. This method of making malleable castings has sidetracked pig iron altogether and scrap with ferroalloys rules the mixtures. The advent of such processes makes great reduction in the consumption of pig iron and lessens the supply of certain grades of scrap. Each process finds that "any old grade" will not do. It must have its special classes of scrap carefully specified in order to work successfully and economically.

Where does all this scrap come from? It is practically impossible to cite the origin of all the scrap produced. No actual records are available which show the tonnages produced.

Therefore, the tonnage of iron and steel scrap produced annually remains an unknown figure to the buyer and seller. The same holds true for the consumption of this raw material. There are estimates, guesses and assumptions to cover the tonnages involved, but there are no actual statistics or barometers to help govern the judgment of one interested in scrap.

With the ever-increasing consumption of scrap in the processes for the manufacture of steel, the subject assumes an importance second only to pig iron in the industry. In considering pig iron, however, we have statistics which show, to a nicety, its production and consumption. In contra-distinction to this situation, we are left in ignorance of the conditions pertaining to scrap iron and steel.

Statistics Are Difficult

Up to the present time it has been admittedly impossible to accurately ascertain the potential resources from which this secondary ferrous material of the iron and steel industry originates. But it is known that the quantity of scrap produced is in relative proportion to the ingot and pig iron production of the country. Its consumption, however, must be based upon the "going" melting capacity of the mills and foundries.

The accumulation of actual statistics of the production and consumption of iron and steel scrap, under the present conditions, has been impeded by the uncertainties involved. If it were possible to accurately calculate the amount of scrap produced by using a percentage of the finished steel, based on the life of the products made therefrom, the problem would be simplified. There is an uncertainty, however, regarding the life of steel products. Further, there is that amount of steel which goes into obsolescence, or "never returning steel" scrap, which makes such a figure amount to no more than a guess. The only other apparent way to arrive at the tonnage produced was to ask producers of scrap to furnish us with their figures. This compilation was exceedingly difficult, due to the fact that even the records of the large producers were far from complete and had to be brought up to date, while the small producers had no records at all. The figures shown in this paper are those arrived at by taking concrete productions of scrap, by groups of recognized industries, and applying these to their various classes.

The total annual tonnage of scrap produced in the country, by taking ten-year averages, shows an amount of 24,863,644 tons. Of this amount approximately 11,944,223 tons find their way to market, to be handled by dealers and brokers. The remaining tonnage stays within the confines of the steel mills for remelting purposes.

The above tonnages of scrap are produced about as follows:

Scrap Never Appearing on the Market, Tons

Steel Mills:

Butts, crops, etc..... 7,209,012

Scale	1,062,091
Ladle, pit and runner scrap	1,863,318
Foundry: (Malleable and gray iron) Internal scrap	1,910,000
Cast iron car wheels exchanged for new car wheels	875,000
Total	12,919,421

Scrap Appearing on the Market, Tons	
Railroad scrap	2,769,809
Industrial scrap	2,629,085
Automobile scrap	406,979
Country scrap (approximate)	5,000,000
Imports—minus exports	1,138,350
Marketable scrap	11,944,223
Total tonnage produced	24,863,644

Relation of Pig Iron to Scrap

The price of pig iron should have a direct relation to the value of scrap. When pig iron is high and scrap low, the consumer should take advantage of the situation and alter his mixtures to take care of increased percentages of scrap.

Scrap should have a direct relation in price to that of pig iron. Likewise, a grade of scrap should be given a value which compares with its ability to return economy. Up to the present time, the relation of prices between pig iron and scrap has been rather chaotic.

The consumers of scrap have a great deal to do with the existing conditions in the scrap business. They should have a uniform scrap iron contract and exact no unusual discounts. The contract should contain a standard classification which should be fair alike to the consumer and the dealer.

When a consumer suspends shipments of scrap, he usually causes the dealer embarrassment. The latter buys the majority of his material from railroads and manufacturing industries who force him to accept their deliveries without regard to exigencies. Consequently, when shipments to consumers are held up, the dealer must either stand demurrage on his cars of scrap or divert them to a yard where his costs are increased by the rehandling of the material.

Consumers of scrap buy on a basis of "delivered price." Consequently, their attention has never been generally called to the freight rates on this commodity. It might be of interest to know that even though the value of scrap is less than that of pig iron, the prevailing freight rates are usually higher. The free movement of scrap is greatly restricted, especially on low markets, by the existing high freight rates. Possibly, if freight rates were adjusted, the movement of scrap from nonconsuming territories to consuming areas would be greater, due to a more advantageous price, at the point of origin.

Some producers of scrap send out lists to both dealers and consumers. The consumer often bids on these lists against a dealer with whom he has an order. The dealer tries to obtain his scrap from these lists to fill an order at a given figure. The consumer in overbidding the dealer's price forces the market up. This places the dealer in a difficult position. A consumer of scrap should make an appraisal of the scrap dealer as an adjunct to his business. By comparing the service rendered by a dealer with the estimated cost of a department in the consumer's organization to provide an adequate supply of scrap, the value of the dealer could be established. If such a comparison reveals that the dealer is a necessity and performs a real service, consideration should be given to co-operating with him, rather than competing against him at his sources of supply.

Scrap markets are manipulated constantly to the profit of some and the distress of others. A more stable market is greatly to be desired. This would place scrap values on a par with other kindred iron and steel products. Dealers may be able to constructively aid in stabilizing these markets if they will make their bids in accordance with the grades they desire to ship.

Less Tin Produced

Tin produced in the United States is incidental to mining in the tin-bearing gold placers of Alaska and in 1923 was entirely from the Hot Springs district of the Tanana region. The concentrate was 3.05 short tons and the metallic tin obtainable from this was 1.9 short tons.

Two smelting plants have been in operation, that of the American Smelting & Refining Co., Perth Amboy, N. J., and the Williams Harvey Corp., Brooklyn, N. Y. Both plants ceased smelting of concentrates about the middle of the year. The smelter output of metallic tin in the United States in 1923 was 7466 short tons, compared with 9108 short tons in 1922 and 17,652 short tons in 1920.

In 1923 tin concentrate imported into the United States was 4530 tons, compared with 13,804 tons in 1922 and 34,148 short tons in 1920. Metallic tin imported for consumption in the United States was 77,166 short tons. New tin made available for consumption in the United States was 83,501 short tons in 1923, compared with 75,294 short tons in 1922.

The American Bridge Co., Pittsburgh, sent a tow of 12 steel barges South, Oct. 22. The consignment goes to the Tennessee Coal Iron & Railroad Co. for use in the Warrior river. The barges are each 140 feet long, 25 feet wide, and 8.6 feet deep. They have a capacity of 600 tons each.

Forging Output Shows Large Gain

The department of commerce announces that, according to data collected at the biennial census of manufactures, 1923, establishments engaged primarily in the manufacture of iron and steel forgings, not including steel works and rolling mills, reported products valued at $178,951,349, an increase of 115.2 per cent as compared with 1921, the last preceding census year. The principal products of the establishments included under this classification consists of light and heavy drop and steam hammer forgings, rough and finished.

In addition, forgings were manufactured to some extent as secondary products in steel works and rolling mills and by establishments engaged primarily in other industries. The value of such commodities thus made outside the industry proper in 1921 was $9,988,344, equal to 12 per cent of the total value of products reported for the industry as classified. The corresponding value for 1923 has not yet been ascertained but will be shown in the final reports of the present census.

Of the 233 establishments reporting for 1923, 48 were located in Pennsylvania, 36 in Ohio, 27 in Illinois, 25 in New York, 18 each in Connecticut and Michigan, 13 in New Jersey, 11 in Massachusetts, and the remaining 37 in Alabama, California, Colorado, Indiana, Kentucky, Maine, Maryland, Missouri, Tennessee, Virginia, Washington, West Virginia, and Wisconsin. In 1921 the industry was represented by 240 establishments, the decrease to 233 in 1923 being the net result of the loss of 41 establishments which had been included for 1921, and the inclusion of 34 new establishments. Of the 41 establishments lost to the industry, 9 had gone out of business before the beginning of 1923, 8 were idle throughout the year, 3 reported products valued at less than $5000 (no data are tabulated at the biennial censuses for establishments with products under $5000 in value), and 21 had been engaged primarily in the manufacture of iron and steel forgings in 1921 but reported other commodities as their principal products in 1923 and were therefore classified in the appropriate industries.

A formal contract has just been signed by a company in Santo Amaro, Bahia, Brazil, under the terms of which the concern is to furnish that city with water for a term of 60 years, the contract calling for replacement of the present water pipes throughout the city and for extension of mains to every part of the urban district, according to a cable to the department of commerce.

Drop In, Between Revolutions

How the Foundry Business in Mexico Must Be Cultivated, as Told By an American —Sometimes 3-inch Shrapnel Shells Make Good Crucibles and the Ground Is Sprinkled with Them—Difficulties and Great Expectations

BY H. H. MILLER

NO GOVERNMENT reports or data of any kind covering the foundry industry are available in Mexico. There are no foundry associations, no foundry publications, and no attempts at co-operation or exchange of ideas between foundry owners and operators. Each foundryman and would-be foundryman works out his problems the best he can for himself and then as a rule is not inclined to give useful information to his neighbors and competitors.

The Consolidated Rolling Mills & Foundries Co., of Mexico City, have perhaps the best equipped nonferrous foundry in Mexico. It operates it in connection with its steel plant and makes brass and bronze castings of all kinds, and a standard line of globe valves that compares favorably with the United States product. There is another brass foundry in Guadalajara, state of Jalisco, making a line of valves. Aside from these plants the writer does not know of anyone manufacturing a standard line of either brass or aluminum goods for the market. There is no cold-rolled, sheet or ornamental brass made in Mexico.

With few exceptions all of the brass foundries, aside from some that are operated by mines, smelters and industrial plants to take care of their own work, are run as adjuncts to iron or steel foundries, and in some cases to blacksmith shops. They do strictly a jobbing business, for customers in their immediate vicinity.

Their orders come from mines, smelters, railroads, ranches, and industrial plants for reserve stocks, repairs and replacements. This takes in a wider range of work than usually goes to the jobbing shops in the states because of the difficulties and delays incident to getting machinery parts and repairs from the United States and Europe. Here, instead of wiring to the factory or a service station for a new part when something breaks, the general custom is to go to the local foundry or machine shop and order one made. The cost is usually considerably more than that of a piece from the factory and it may not be as well finished, but if it will answer the purpose and can be delivered promptly the question of price and appearance is not considered. Pieces of cast and malleable iron often are replaced with brass castings and a few brass foundrymen who have a reputation for giving prompt attention to rush jobs take a number of these orders away from the iron foundries that as a rule are slower on deliveries.

In the days before the revolutions the plants carried large reserve stocks of everything they were likely to need for several months, and even years ahead; but during the last few years they have been drawing heavily on these reserves and buying only whatever was needed for immediate use after stocks were exhausted.

In some parts of the country the work for the sugar mills and refineries is a large item. Here in Torreon, while the volume of work we do is not so very large, it is varied. For the local smelter we make the class of castings mentioned, but in smaller quantities. For the cotton seed oil mills and soap factories we make several kinds of pipe fittings, press boxes, soap dies, gears, pinions and many special castings as well as the regular line of round and hexagon sticks, bushings and general repairs for pumps, motors, and engines.

The Laguna district of which Torreon is the commercial center, is primarily an agricultural country and the success or failure of the crops depends to a large extent on the flood waters of the Nazas river. When there is plenty of water and not too much revolution the ranches give a lot of work to the foundries and machine shops. They use some brass in the cotton ginning plants, the narrow gage locomotives and cars, steam engines, gas and gasoline engines and pumping plants. There still are some old style gin presses in operation using a brass nut weighing about 500 pounds and once in a great while we have an order for one of them. The hardest jobs we get from the ranches are runners for the centrifugal pumps used for irrigation. They require expert patternmakers and coremakers. We have cast about 10 church bells in the past two years. Few aluminum castings are made in Mexico. We probably use more aluminum for patterns than anything else, and most of them are made from scrap aluminum.

A large per cent of the brass castings used in Mexico are cast entirely from scrap brass. Many of the master mechanics at mines, smelters and industrial plants make their own brass castings. Their equipment generally consists of a small coke furnace, a pair of tongs, a crucible and whatever kind of molding sand they can dig in their immediate vicinity. They use scrap brass with no fluxes or deoxidizers. While no one of this class makes many castings and no large ones, there are so many of them that in the aggregate they take a considerable amount of work away from the regular foundries.

Not all the foundries operated by the industrial plants, mines and smelters are included in the class mentioned, but the exceptions are few and far between. The American Smelting & Refining Co. and the Penoles Mining Co. have foundries for brass and iron in connection with their Monterey

The Founding of Brass in Mexico

MEXICAN foundry practice, of course, does not offer anything new or constructive to the American castings industry, but there is this much to the accompanying article, it presents an interesting picture of conducting a foundry business under difficult circumstances, and the American foundryman will appreciate that, by contrast. The Mexican workers are slaves to custom; their methods frequently are primitive, and even the users of castings have certain set ways about how they want them made. Business is made difficult by the unsettled conditions; "molders" today may be "captains" in the revolutionary set tomorrow. The author is operating a foundry at Torreon, Mexico, and understands the Mexican situation thoroughly, so that what he has to tell in this paper, presented at the annual meeting of the American Foundrymen's association in Milwaukee, Oct. 11-16, is instructive.

plants, and the former company has another foundry at Aguascalientes. All three have good equipment, are handled by competent foundrymen, and turn out good castings.

At times during the revolutions some of the regular foundries were closed down leaving a number of molders out of employment. Some of the molders joined the revolutionists and became captains or generals and others opened up brass foundries. Their foundries were generally in the corner of a blacksmith shop or small machine shop, and their equipment was extremely limited. The native Mexican has the world beaten for inventing laborious and complicated ways for doing a simple job, and on the other hand sometimes of doing a difficult job with whatever crude means he many find at his disposal.

If firebricks were not available for furnace lining, common construction bricks were used and sometimes even the sun dried adobes. When the World war cut off the supply of crucibles, they built cupolas of old boiler shells, sections of smokestacks, or galvanized iron tanks, and used hand driven forge blowers for air supply. For small castings up to 4 or 5 pounds they set a clay lined ring or shell on the blacksmith forge and used the cast steel body of the 3-inch shrapnel shells for crucibles. These were inexpensive crucibles and the supply unlimited, for the landscape here was well sprinkled with them from time to time.

As a rule they did not know anything about fluxes or the compositions of high grade bronzes so the lack of prime materials did not bother them. One of our molders once told me that the only *liga,* alloy, they used was a little copper sometimes.

Railroads Have Own Foundries

Since the railroads have been under government management, they have installed iron and brass foundries in most of their shops. They have 10 or 12 in operation, but I am not in a position to say anything about the class of work they turn out, or of the efficiency of their organizations.

All kinds of devices for melting are employed. The writer knows of only one electric furnace being used for brass and that is a 750-pound capacity furnace in the Consolidated Rolling Mills & Foundries Co., of Mexico City.

For linings the Mexican foundrymen use whatever they can find closest at hand. The railroad shops use regular fire brick that they chip to more or less of a wedge shape and set in fireclay and high silica sand. Here we use fireclay purchased from the local hardware stores and a sand, found in certain parts of the bed of the Nazas river, that is about 92 per cent silica. We mix one part of the fireclay with two parts sand and ram it in the two halves of the furnace shell around a wooden core. By patching it once in a while we get from 30 to 50 heats out of a single lining. The only cost of the sand is that of hauling it a distance of about two miles from the river, so linings are not very expensive.

Perhaps 80 or 85 per cent of the brass furnaces in use in Mexico are of the pit type for coke and crucibles. Some use cupolas for the large castings and for very small ones improvised furnaces on the blacksmith forges.

There are no deposits of molding sand that the writer knows of which are being exploited and offered to the foundry trade. Molding sand takes a high freight rate here, being put in about the same class as fire clay and if shipped any long distance the cost is almost prohibitive, so each foundryman tries to locate a sand supply as near as possible to his foundry and get along the best he can with it. My sand supply is less than two miles from the foundry. I can not say very much for its quality, but so far it is the best we have been able to find.

In the railroad foundries all the molders and, so far as I know, all the superintendents and foremen are Mexicans. In most of the large privately owned foundries the foremen are foreigners and all the molders natives of the country. Under proper direction and with proper training, they make good molders and some do just as good or better work than the average American. As a general rule, however, they work slower and require more helpers than in the United States. They lack initiative and it is difficult at times to get them to adopt new methods and then to keep them from drifting back to the old ones to which they have been accustomed. The Mexican is a slave to custom and likes to do things as he has always done them and as his forefathers did before him. He shirks responsibility and is never at a loss for a reason outside of himself for anything that turns out badly. It happens frequently that he will use an infinite amount of care and patience in doing a difficult piece of work and then slght some easy and insignificant part, like anchoring or venting a core or putting on enough weights or clamps and lose the casting.

A patternmaker in a jobbing foundry in Mexico has to be an expert to be able to handle all the jobs that come in to him. There are a few here as proficient in their line as can be found in any part of the world and who are equal to any and all emergencies. Ther are many more, though of the class ranging from mediocre down. Most of the first mentioned class are foreigners and the better class of Mexican patternmakers have been their understudies.

One of my customers thinks he has a patternmaker. What he sends out, however, are really models of what he wants, holes and everything, with no signs of core prints nor core boxes. Not long ago he sent me a wooden bushing 6 inches in diameter, 18 long, with a 4-inch hole through it. To facilitate molding he made it in two halves put together with dowel pins. This fellow is an advocate of split patterns, but very often splits them in the wrong place.

Old Castings as Patterns

We use old and broken iron castings for patterns here more than they do in the states. American molders use profane language when this kind of a job is handed to them; a Mexican molder takes it as a matter of course and patiently worries along with it until it is finished. Sometimes we make gear wheel molds from old broken ones, and where teeth are missing, cut out in the sand so that part of the rim will be solid. The customers ask for them that way and cut in the missing teeth with a hack saw and a file. They would rather do this than pay for a pattern.

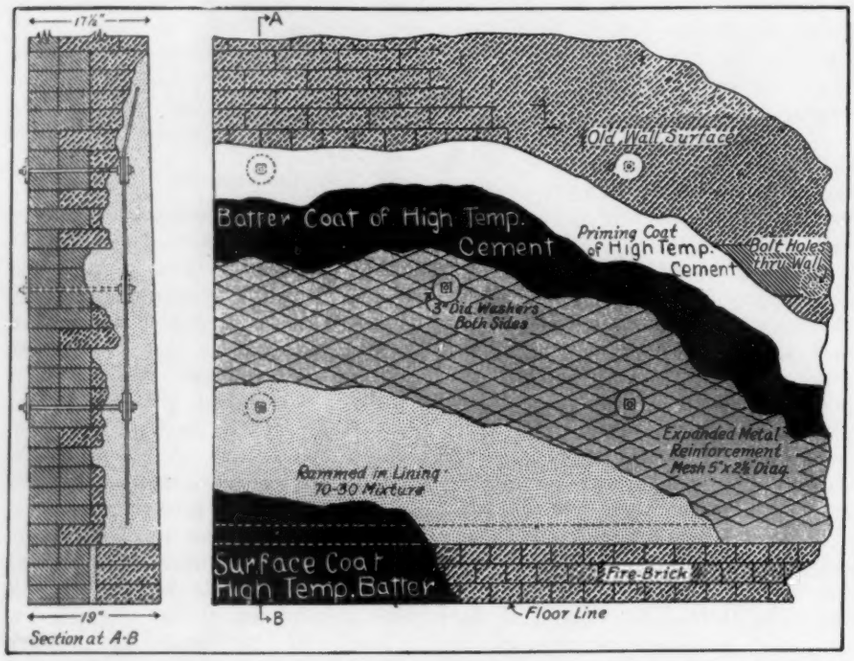
The wag that made the remark about the first hundred years of married life being the hardest might have said the same thing about trying to build up a foundry business in Mexico. It takes time, patience, and most of all personal contact and acquaintance with your customers to build up a regular trade. Neither circular nor personal letters nor any kind of advertising go very far towards getting your first orders. When the writer decided to start in the brass foundry business circular letters were sent out to everybody we could think of as prospective customers. Now in this country many people will answer communications that the average business man in the United States would throw in the waste basket without even reading, so in answer to the first circulars I received a number of courteous letters from individuals and companies telling me how much pleasure it gave them to know I was going to open up a brass foundry and assuring me of their orders just as soon as they should need something in my line.

I thought business was going to start off with a big rush, but orders

were not received. Other circulars and personal letters were sent out with about the same lack of results, and then I tried going after them personally. It has nearly always taken a personal visit, and in some cases several scattered over a number of years, to get the first order; but after the first the rest come easier. When you once get the trade and confidence of an individual, company, or corporation here, they stay with you pretty well and any new competitor entering the field will find it difficult to get them away. Still, a personal call once in a while helps to hold them in line, and it is a good idea to drop in between revolutions just to show them you are still on the job. So I find it worth while to get around to all of them and keep on friendly terms with everyone from the general manager to the portero. The portero is the fellow stationed at the extreme outer gate, and he sizes you up as you go in and come out. If you drive up in your car, he throws open the gate and gives you *paso libre;* but if you go afoot and he does not know you, he may ask you where you are going and what is your business.

To sum it up, the field covered by the brass foundries in Mexico at present is limited and not large enough to justify one in dividing it up and trying to be a specialist in any particular line. The few of us who have tried to separate ourselves from the iron and steel foundries and give our attention to brass, bronze, copper and aluminum casting, have to take all kinds of jobs that are offered to keep busy and hold our organizations together.

We know that Mexico is one of the richest undeveloped countries in the world and we know what can be done if it ever settles down and really goes to work. We still believe that this will actually happen some time, and when it does, we figure on being here and in on the ground floor. In the meantime, we are doing what we can to make the best of the immediate present.



SECTIONAL AND SIDE VIEW OF RECONSTRUCTED BOILER FURNACE WALL SHOWING THE SUCCESSIVE STEPS INVOLVED IN THE REPAIR WORK, BEGINNING WITH THE PRIMING COAT AND FINISHING WITH A SURFACE COAT OVER THE RAMMED-IN LINING

Boiler Wall Is Repaired with Old Linings

Complete side wall and front wall patches using crushed old furnace linings as a refractory base, are being successfully used on oil burning boiler furnaces at the power station of the New York Central Railroad Co., Glenwood, N. Y. This method of construction was tried out by the plant superintendent and a recent inspection of one of the walls so repaired shows it to be in excellent condition after eight months of service.

Expanded metal reinforcement is embedded in the patch and is anchored through the wall, using ⅝-inch bolts placed at suitable intervals. The service required is unusually severe, not only on account of the use of oil fuel, but for the fact that this station is used to carry peak loads morning and afternoon, with a consequent cooling and heating of furnace walls twice in each 24 hours, which tests the walls severely.

The expanded metal used was surplus material intended for reinforcing concrete floors and roads. All materials for patching work of this sort, are, as a rule available around any boiler plant, with the possible exception of the expanded metal. This material can be secured in standard sizes measuring 5 feet 3 inches wide in 8 or 10-foot lengths, at a reasonable cost. Bolts and washers of suitable size were found around the plant and crushed old fire brick, which already had been in service at high temperature in the same furnaces, was used as the refractory. This was crushed to ¼-inch mesh, using the fines, and mixed with a high-temperature cement in proportion of 70 pounds of crushed brick to 30 pounds of the cement. In making the mixture the high-temperature cement first was diluted to the consistency of a heavy pancake batter, and the crushed material added gradually and mixed thoroughly.

One of the walls as shown in the accompanying diagram, was eaten away to the full depth of the fire brick lining, leaving the red brick exposed. In preparing the wall, all loose material was removed, leaving as far as possible, the fire brick headers projecting into the space to be patched. The metal reinforcement then was placed and bolts attached, holes through the wall being made easily with an air hammer. Three courses of fire brick were laid at the floor line, giving the wall a thickness of 19 inches at that point, to permit the patch to slope back about ¼-inch to each foot in height. This was done to prevent bulging of the wall.

A wood form then was erected in sections and the crushed old fire brick mixture rammed in behind the form after the old wall surface had been prepared with a priming coat of high-temperature cement followed by a coat of the same material in batter form. This batter coat was applied sectionally as the ramming-in progressed, so as to insure a moist surface that would bond the crushed fire brick mixture to the old wall. The whole job was completed within two days. This method of reconstruction prevented the tearing out of entire side walls and continues to give excellent results in service.

More than 1000 gas samples have been taken from the interior of a commercial blast furnace shaft during the past year by engineers who are making a study of commercial blast furnace practice for the bureau of mines. These data have been studied and a report of the results will be issued at an early date. In the future the bureau will conduct a similar investigation at another commercial blast furnace.

Fluorine Influences Refractories

Activity of This Gas in Basic Electric Furnace Practice Results in an Increase in Silica Content of Slag—Fluorspar Promotes Sulphur Elimination and Assists in Keeping Slag Reducing in Its Action

BY FRANK T. SISCO

REFRACTORIES used in basic electric furnace practice may be divided into three groups according to their location in the melting chamber. These are the bottom and banks of magnesite, the side walls of silica, and the roof of silica. The bottom and banks of magnesite may be constructed in any one of the numerous ways accepted as standard practice. In general, the side walls of silica brick are laid with headers exposed and may or may not be separated from the magnesite by one or two courses of chrome brick. The roof is constructed of either special or standard shapes. The advantages and disadvantages of each kind of brick are well known and need no further comment.

Slag condition and composition probably have more influence on the upper walls and the roof than on any other section of the furnace refractories, and are an important factor in either preserving or shortening the life of this part of the lining. After oxidation is completed and the oxidizing slag removed in the cold scrap process, or after the duplexed open-hearth metal is poured into the electric furnace in the hot metal process, the deoxidizing slag is put on the metal. The slag is made up of 5 to 10 parts of lime, 1 to 3 parts of powdered coke, and 1 to 3 parts of fluorspar. These materials may be mixed on the furnace floor before shoveling into the furnace, or may be added to the furnace separately.

Calcium Carbide Essential

As soon as the slag has been thrown into the furnace, part of the coke burns to carbon monoxide, filling the furnace with a reducing gas. Another part of the coke reacts with metallic oxides floating on the metal (ferrous and manganous oxides, FeO and MnO), and with the metallic oxides in the slag-making materials, reducing them to their respective metals. As this deoxidation of the slag proceeds, the color of the slag changes from brown or greenish brown to light brown and finally to white; the latter denoting that deoxidation of the slag is practically complete. These colors represent the appearance of a spoonful of the slag cooled in air.

To accomplish a complete deoxidation, and a complete desulphurization as well, it is necessary that an appreciable amount of calcium carbide be present constantly. To maintain the required amount, the slag should be basic, sufficiently fluid, but not too much so, and contain an excess of carbon. To this end the furnaceman makes additions of lime, coke and fluorspar either together or separately at intervals during the final period.

Most operators of basic electric furnaces have considered that fluorspar was not contained permanently as such in the deoxidizing slag. It was assumed that the fluorine would be expelled and pass off as a gas soon after the fluorspar was added. Probably no one has investigated the role of this element under the influence of the arc. So long as the furnaceman obtained the slag fluidity he desired, he worried little about the cause of this fluidity. For several years the writer had noticed that a complete chemical analysis of electric furnace deoxidizing slags would seldom total to 100 per cent, but under the pressure of wartime operation had no opportunity to ascertain the cause.

TABLE I

Analysis of Lime and Fluorspar Used

	Lime per cent	Fluorspar per cent
Silica	5.47	2.91
Aluminum and iron oxide	1.20	0.65
Calcium oxide	83.34	....
Magnesium oxide	8.63	....
Calcium fluoride	....	90.51
Calcium carbonate	....	5.48

The investigation of the action of fluorine in the deoxidizing slag had its inception when a sample of slag from a 30-ton basic lined heroult furnace was analyzed by standard methods and found to contain only a trace of silica. Knowing that the lime used for the slag contained a considerable percentage and that an appreciable amount was present in both the coke ash and the fluorspar, it was decided to discover, if possible, what had become of the silica that normally should be present. The history of the heat was investigated and it was found that 40 mintues before the sample was taken the slag had been thick and viscous, due to a large patch of the bottom coming up. More than 100 pounds of fluorspar were necessary to thin the slag. As soon as slag had thinned the sample was taken.

Slag Contains Fluorides

The apparent absence of silica can be traced to the fluorspar addition and it has been found that electric furnace deoxidizing slags are complex mixtures of silicates, fluorides, and silico-fluorides. Some representative analyses of deoxidizing slags are given in Table III. Sample No. 1 shows typically how much fluorine may be present in the slag. The fluorine as calcium fluoride is 28.40 per cent. All of the fluorine is not present as calcium fluoride, CaF_2; a considerable quantity is present as a compound of calcium, silicon and fluorine, probably as calcium silico-fluoride, $CaSiF_6$. The difference between the true silica, 9.65 per cent, and the total silica, 13.17 per cent, represents the silica probably existing as a silico-fluoride.

Part of the fluorine present in the slag in sample No. 1 has been lost by volatilization one hour later, as sample No. 2 has only 10.45 per cent fluorine as calcium fluoride present. This decrease was not caused wholly by volatilization, but was due, to a slight extent, to an increase in slag volume from various additions of lime and coke during the hour that elapsed between samples 1 and 2. The amount of silico-fluoride also has decreased appreciably, as the difference between the total silica and true silica, or 3.52 per cent in sample No. 1, has dropped to 1.55 per cent in sample No. 2. This decrease was due almost wholly to the volatilization of the fluorine, or to a chemical reaction between silicates and silico-fluorides in the slag.

The decrease in the amount of fluorine present was accompanied by a decided change in the physical condition of the slag. When sample No. 1 was taken the slag was thin and watery. One hour later it was fluffy, foamy and in good shape.

Slag No. 3 was made according to standard practice, except that part of the fluorspar was replaced by silica sand. The slag was pure white in color and in fairly good condition. The ferrous and

Abstract of a paper presented at the general meeting of the American Electrochemical society held in Detroit Oct. 2 to 4, 1924. The author, Frank T. Sisco, is metallurgist, air service, war department, McCook Field, Dayton, O.

manganese oxide contents are somewhat above normal; the former should be below 0.50 per cent and the latter little more than a trace. In this sample there is only a small amount of fluorine, as indicated by the amount (5.67 per cent) of calcium fluoride, and only a small amount of silica (0.80 per cent) is present as a silico-fluoride.

Slag No. 4 is a typical deoxidizing slag made with silica sand. In this case no fluorine is present at all, consequently the true silica is also the total silica, as none could be present as silico-fluoride.

Fluorine Aids Deoxidation

It generally is admitted by furnacemen that a deoxidizing slag, made by substituting silica sand wholly or in part for fluorspar, is much more difficult to keep strongly reducing in its action. Just why this is so, the writer is not prepared to say, but from his own experience, and from the word of others, it is comparatively difficult to form calcium carbide, and exceedingly difficult to keep it in the slag in appreciable amounts, unless fluorspar is used almost wholly as a thinning agent.

In addition to the value of fluorspar in promoting carbide formation, it also aids in desulphurization. Experience has shown that desulphurization is never so certain, nor so complete when silica sand is used in the slag. Fluorspar is a desulphurizing agent in itself, and in addition promotes sulphur elimination by conferring fluidity and assisting in keeping the slag sufficiently basic and reducing in its action. The fluidity obtained by fluorine is not with so great a sacrifice of basicity, as is the case when silica sand is used. In view of these facts, we can safely state that fluorine is an exceedingly valuable aid in deoxidizing and desulphurizing, and that its substitution, wholly or in part, by silica sand results in decreased slag efficiency. We shall have occasion to refer to this again.

The one disadvantage in the use of fluorspar is the corrosive action of fluorine on the furnace roof and walls. Fluorine always is found by analysis in deoxidizing slags to which fluorspar was added, and the presence of silico-fluorides is proven by the difference that exists between the true silica, as determined by the standard methods of analysis, and the total silica. Volatilized fluorine causes a continual corrosion of the roof and side walls as is shown by the fact that the roof loses weight, even more than could be discovered by an occasional overheating and that the slag constantly is being enriched in silica at the expense of the roof and side walls.

The method of making slag additions to the heat, shown in Table II, is by no means representative of good furnace practice, as the slag-making materials were added in the manner indicated to investigate the specific effect of florine. In regular practice nearly all of the slag is added at once, and only a small amount of lime, coke, and spar added during the rest of the heat to keep the slag in good condition.

It will be noted from Table I that the percentage of silica in the lime and fluorspar is less than 5. In the coke probably less than 5 per cent is silica. Twenty-five minutes after the addition of 600 pounds of lime and 100 pounds of fluorspar there is 6.05 per cent silica present in the slag. Thirty minutes later 9.78 per cent is present, and at 12.30, one hour later, 16.91 per cent is present.

The percentage of silica increases progressively from 6.05 per cent to 19.17 per cent. Assuming that the slag-making materials contained 5 per cent silica and that the total slag weighed 1200 pounds the silica enrichment during the deoxidation period was 140 pounds, of which the greater part came from the roof and walls. In the daily practice this probably is close to 100 pounds or 10,000 to 15,000 pounds for a lining and roof of average life, in a 6-ton basic furnace. These figures show that from one-quarter to one-half or more of the lining and roof goes into the slag during their life of 100 to 150 heats.

It should be noted, however, that the corrosion of the roof and upper walls by fluorine is likely to be distributed uniformly, consequently it is not usually the direct cause of failure, although when the lining and roof become relatively thin, failure caused by uneven expansion and contraction may be hastened.

Silica Sand Widely Used

The use of silica sand to replace fluorspar, either wholly or in part, has gained in favor because furnacemen have realized that fluorine had some ill effect on the refractories. Using sand, the fluidity necessary could be obtained by the formation of calcium silicates. It frequently has been argued that when fluorspar is used, the deoxidizing slag adjusts itself to about 20 per cent silica anyway, so why not add that amount of silica at the start and eliminate fluorspar? This, however, is only partly true. In the slag made with fluorspar the silica will increase steadily, but it will not adjust itself to any definite ratio of acids to bases. The silica in the average slag made with spar will be much nearer 16 to 18 per cent than to

TABLE II

Changes in Slag Composition During Deoxidation

Time	Additions to Slag, lbs.	SiO_2 True per cent	SiO_2 Total per cent	FeO per cent	MnO per cent	Al_2O_3 per cent	CaO per cent	CaF_2 per cent	MgO per cent	CaS per cent	CaC_2 per cent	Free Carbon per cent	Appearance of Slag
11.05	Lime, 600 Fluorspar, 100												
11.30	Sample taken	4.53	6.05	4.31	1.25	2.65	61.47	13.62	10.13	0.23	nil	nil	Light greenish-brown. Thick, viscous, cold.
11.35	Coke, 65 Fluorspar, 60												
12.00	Sample taken.....	5.20	9.78	1.55	0.63	2.51	49.72	23.48	10.37	1.06	nil	0.30	Light brown. Thin watery, wärmer.
12.05	Coke, 50												
12:30	Sample taken	10.12	16.91	0.60	0.13	2.94	48.51	18.40	9.75	1.44	0.45	0.68	Grayish-white. Thin, getting hot.
12:55	Lime, 150												
1.00	Sample taken	15.25	17.08	0.85	0.12	3.01	54.71	11.83	9.81	1.93	trace	0.31	White. Fluffy and hot. Condition good. No carbide.
1.05	Coke, 50 Fluorspar, 35												
1.30	Sample taken	16.35	18.27	0.41	trace	2.96	50.17	15.13	9.45	2.27	0.88	0.57	Grayish-white. Carbide. Fluffy and hot. Condition excellent.
1.35	No addition made												
2.00	Sample taken	16.83	18.31	0.27	0.06	3.06	55.16	10.17	10.21	2.37	0.27	0.31	Almost white. Slightly carbide. Hot. Condition good.
2.05	Lime, 50 Coke, 30 Fluorspar, 20												
2:30	Sample taken	17.68	18.90	0.31	trace	2.90	51.47	11.58	10.58	2.85	1.08	0.47	Dark gray. Strongly carbide. Hot. Condition excellent.
2.35	No addition made.												
3:00	Sample just before tap	18.31	19.17	0.25	trace	3.28	56.17	6.32	10.81	2.88	0.65	0.31	Gray. Carbide. Condition excellent.

20 per cent. When sand is used, ordinarily the silica will be more than 20 per cent before the desired fluidity is attained.

One of the chief factors in obtaining fluidity is by the formation of calcium silico-fluoride. This constituent when associated with calcium fluoride and calcium silicate makes the slag much more fluid with the same percentage of acids (silica) than when calcium silicate alone is present. Thus the slag may be kept relatively much more basic, and thus more efficient, and still have the necessary fluidity.

The corrosion of the roof and side walls by fluorine is a serious matter, but it is not so serious as an imperfectly deoxidized steel, and there is no question but that the slag is much more efficient in deoxidizing if fluorspar is used as a thinning agent. And in addition, as fluorspar is a direct aid in desuphurizing, while silica sand is not, this alone would make the use of fluorspar justified even at the sacrifice of a few heats on the walls and roof.

It is true that when excessive amounts of fluorspar are used the percentage of silica in the slag increases rapidly at the expense of the roof and walls. In good furnace practice, the slag never is permitted to get so thin and watery that fluorine corrosion becomes excessive. The proper carbide slag will contain about 10 per cent fluorine as calcium fluoride, and 1 to 3 per cent silica as silico-fluoride.

Lining Affects the Slag

Other factors in the condition of the deoxidizing slag affect the condition and thus the life of the refractories. These untoward conditions in the slag, causing untoward conditions in the roof and walls, are reflected back to the slag composition, and thus affect the deoxidation of the molten bath. The principal factor in causing a bad slag condition is overheating the roof and walls. Another factor, but with more influence on the lining and roof than on the slag, is the formation of calcium silicate by the reaction between the silica brick and lime dust. A third factor which might be discussed incidentally is the influence on the slag of patches of the bottom coming up.

An excessively thin, watery slag, due to the use of too much fluorspar, a too high temperature, or both, nearly always causes overheating of the roof and to some extent of the upper side walls. The thin, watery slag is smooth and mirror-like and lies quietly, thus producing a maximum amount of reflection. The heat from the arcs is, to a large measure, reflected upward and affects the roof brick, quickly causing them to drip. As the liquid silica drips into the slag, the amount of silica increases rapidly, any carbide present is destroyed or prevented from being formed, and the process of furnace deoxidation is stopped almost at once.

A dripping roof will affect the composition of the slag quickly. In one instance the combined ferrous and manganese oxide content in the slag increased from 0.61 per cent to 4.74 per cent in 12 minutes. An increase in the oxide content in the metal bath would be the result of this increase in oxides in the slag. Overheating the roof may be almost prevented by intelligent furnace operation.

The use of too much fluorspar, therefore, is accompanied by two evils, so far as the roof and walls are concerned: (1) The thin, watery slag resulting from an overdose of spar produces a maximum amount of heat reflection, and may cause the roof or upper walls to drip, and (2) the large amount of fluorine present in the slag promotes the rapid corrosion of the silica refractories. Both of these evils result in an unsatisfactory slag condition; the silica content increases too fast and deoxidation may be retarded or even stopped altogether.

In shoveling lime into the furnace the melting chamber becomes filled with a fine, powdery dust, which may react with the hot exposed surface of the silica brick in walls and roof to form calcium silicate. If the refractories are sufficiently hot, this calcium will melt as fast as formed and will drip into the slag, thus exposing a fresh surface of the brick to attack. Wearing away the brick by the formation of calcium silicate is not especially serious, as in good furnace practice only two, seldom more than three, additions of lime are necessary in the deoxidation period. It does, however, become serious when the furnaceman, as is the habit with many, adds a shovelful or two every few minutes.

No difficulty is encountered with the bottom in the deoxidation period. Unless the heat is in the furnace an unusually long time, only a small amount of the dolomitic refractory works loose and comes up to contaminate the slag. Some bottom trouble may be encountered in melting and oxidizing in the cold scrap process. Any refractory working loose then will be carried away by the oxidizing slag. The absence of bottom trouble, of course, predicates an excellent bottom at the start, one firmly sintered and free from cracks, into which the metal may seep during the final refining. In good furnace practice metal and slag will have practically no effect upon the refractories in the bottom.

Should a patch of the bottom work loose during the deoxidizing period, its effect upon the slag composition and condition can be noticed almost immediately. The high magnesia refractory makes the slag thick and viscous. The iron oxide in the dolomite or magnesite, which may amount to 6 or 8 per cent, reacts with any calcium carbide in the slag and tends to destroy the existing reducing conditions. When any of the bottom comes up it is necessary to add excess of fluorspar, and follow this with powdered coke to bring the slag into shape again.

TABLE III

Electric Furnace Deoxidizing Slag Analyses

(In per cent by weight)

Constituent	Slag No. 1 Proximate	Slag No. 1 Complete	Slag No. 2 Proximate	Slag No. 2 Complete	Slag No. 3 Proximate	Slag No. 3 Complete	Slag No. 4 Complete
Silica, SiO_2, true	9.65	*	16.35	*	17.45	*	26.09
Silica, SiO_2, total	*	13.17	*	17.90	*	18.25	*
Iron oxide, FeO	1.08	1.08	0.41	0.41	1.01	1.01	2.43
Manganese oxide, MnO ..	0.13	0.13	0.08	0.08	0.47	0.47	0.64
Aluminum oxide, Al_2O_3	3.17	3.17	3.52	3.52	4.63	4.63	2.17
Calcium as oxide, CaO ..	64.85	40.29	60.37	52.71	60.13	57.61	54.81
Calcium as fluoride, CaF_2	*	28.40	*	10.45	*	5.67	none
Magnesium oxide, MgO..	11.13	11.13	10.17	10.17	10.75	10.75	12.41
Calcium sulfide, CaS	2.07	2.07	2.61	2.61	1.24	1.24	1.01
Calcium carbide CaC_2..	none	none	1.25	1.25	none	none	none
Free carbon, C	0.43	0.42	0.52	0.52	trace	trace	0.17
Total	92.51	99.87	95.28	99.62	95.68	99.63	99.73

*Undetermined.

Analyses from writer's private notes.

Slag No. 1. From 6-ton basic lined heroult. After adding 100 pounds of fluorspar. Slag thin and watery.

Slag No. 2. Same slag as No. 1, one hour later. Slag fluffy and in good condition.

Slag No. 3. From 6-ton basic lined heroult. Slag made with some fluorspar and some silica sand. Slag thick.

Slag No. 4. From 6-ton basic lined heroult. Slag made with sand; no fluorspar used.

Explains Use of Nickel and Its Alloys

Forms, uses, and alloys of nickel are discussed in Circular 100 of the bureau of standards, a second edition of which has just been issued. According to this publication, the larger part of the world's production of nickel comes from the famous pyrrhotite-chalcopyrite ores of the Sudbury district in

Canada. These ores are at present smelted and refined by three processes, the larger tonnage being smelted in Canada and refined both there and in the United States by the Oxford process. A natural alloy, monel metal, is produced from the same ores by roasting and reducing the copper-nickel matte shipped to New Jersey from Canada

Nickel is produced in the United States in several commercial forms, including 50 or 25-pound ingots or pigs used in the manufacture of nickel-bearing alloy steels; nickel shot, and electrolytic nickel cathodes which are employed by the manufacturers of non-ferrous nickel alloys; nickel-silver and cupro-nickel. Malleable nickel in the form of sheets, strips, rods, and wire is produced for stampings, fittings, resistance and pyrometer wire, spark plug points and kitchen utensils. Nickel castings are used by the chemical industries because of their resistance to corrosive solutions.

Monel metal, which is made up in the usual forms of castings, rods, sheets and wire, is valuable principally because of its high strength at elevated temperatures and its resistance to corrosion and to the erosive action of superheated steam. This makes it particularly adapted for use in steam turbines and valves.

Besides the nickel, or nickel-chromium alloy steels containing from 1 to 3.5 per cent nickel and used largely for automobile and ordnance construction, there are many other nickel bearing alloys which possess interesting and commercially useful properties. Nickel silver contains from 52 to 80 per cent copper, 10 to 35 per cent zinc and 5 to 30 per cent nickel, is used in sheet form as the base metal for silver plated household ware and other stampings and fittings, in wire form for resistance wire, and in the cast form for automobile hub caps, etc. Cupro-nickel, containing about 15 per cent nickel and the balance copper, is used for the manufacture of small arms bullet jackets.

Constantan, which contains about 45 per cent nickel and 55 per cent copper, is used largely for resistance and pyrometer wire. Ferronickel, or 25 to 35 per cent nickel steel, is employed as resistance wire and under the name "invar" is used for many purposes where a low coefficient of thermal expansion is desired. Nickel-chromium and similar alloys, containing from 60 to 80 per cent nickel together with chromium and iron, are used for resistance wire and as a heat resisting alloy. Manganese-nickel alloys, containing from 2 to 4 per cent of manganese and the balance nickel, are used largely for the manufacture of gasoline engine ignition points, and spark plug electrodes.

Germany's Position in Machinery Trade

BY W. H. RASTALL

AS A buyer of American industrial machinery, Germany, under the Dawes arrangement, takes on new interest. It will be remembered that although our exports of such machinery to Germany in recent years has not been heavy the trade in former years was very large, reaching a total of $5,259,000 in 1913 when Germany ranked third among all of the markets in the world, only Canada and the United Kingdom enjoying a larger trade, while for metal working machinery Germany ranked first, the total being $2,280,000 on the average for five prewar years.

During and since the war the need for this machinery has continued but circumstances have prevented business from materializing. Under war conditions the blockade and embargoes made it impossible to make deliveries while more recently exchange and other complications have made business very difficult. As contrasted with the 1913 total, our shipments in 1923 were only $764,000, of which metalworking machinery represented only $210,000. For practically a decade Germany has failed to import American machinery in the way it was done in prewar days.

To a certain degree the shortage of high class equipment represented by these figures has been met by German manufacturers who have taken up the production of machinery of the types formerly imported from America, in many instances even flattering American producers by copying their designs. But it should not be inferred that the need for American equipment has been wiped out as it appears to be agreed by those in the trade that not only are there many classes of American machinery that are not yet produced in Europe, thereby providing American producers with valuable opportunities, but even in the lines produced on both sides of the Atlantic the European manufacturers can not yet equal the best American equipment. As a consequence, the industries of Germany have developed a long standing shortage of equipment of the best quality.

Need Much American Machinery

This statement may seem to contradict other reports that have been received regarding the superior condition of the factories of Germany, for it is undoubtedly true that one of the effects of the decline of the mark was to stimulate the construction and extension of factories in Germany, but reports indicate that these new plants are deficient in the high class equipment that was formerly imported for such purposes and one hears of orders for high class machinery being placed in America, inquiries are in the market and specialists are being sent to this country to study what is available here and to buy what is needed. To the extent that the Dawes' arrangement is successful in re-establishing German industry, it should also create a demand for high class American machinery as needed for those industries.

The following show imports of machinery into Germany over several years:

Average Monthly Imports of Machinery Into Germany in Metric Tons	
1910	5,755
1911	6,344
1912	6,495
1913	6,840
1922	894
1923	457
1924, January	440
1924, February	418
1924, March	500
1924, April	555
1924, May	890
1924, June	1,290
1924, July	1,279

These figures exclude the occupied territory.

As a competitor in the machinery markets of the world, Germany has also developed new interest. Her pre-war export trade was large and flourishing, but the war reduced it to practically zero. In some circles it had been felt that it would revive promptly following the armistice, but it now appears that even with great effort and the advantages accruing from the decline of the mark it has never been regained and since 1922 has been perhaps only half of the prewar volume.

Average Monthly Exports of Machinery from Germany in Metric Tons	
1910	33,400
1911	38,800
1912	44,800
1913	48,000
1922	40,900
1923	25,900
1924, January	19,700
1924, February	19,900
1924, March	19,700
1924, April	20,200
1924, May	21,900
1924, June	20,800
1924, July	25,153
1924, August	25,422

These figures exclude the occupied territory.

Whatever may be the causes, it is clear that for 1924 Germany is exporting less than half the volume of ma-

(*Concluded on Page* 1312)

The author is chief, industrial machinery division of the United States department of commerce. The article is based on impressions obtained on a trip through 10 countries in southwestern Europe.

Cast Pipe Practice Is Changing

Checkered Career of Industry in United States Due to Many Causes—Centrifugal Casting by Two Processes Recent Important Development—Many Advantages Claimed for New Methods—Industry Growing in North

BY RICHARD MOLDENKE

NO OTHER branch of the foundry industry has been brought to a production basis with so great tonnage, low manufacturing cost and remarkably high quality as have been attained by cast iron pipe makers. The pipe shop is an excellent illustration of the fact that repetition work in specialties leads to mechanical equipment and manipulation that reduce production costs to an astonishing degree. Hence cast iron pipe has been sold in dull times at a few dollars a ton over the selling price of the pig iron used. On the other hand, these same pipe shops make fittings of many varieties, and in much smaller quantities, where the cost is high, and when pipe may be sold, say at $50 a ton, the fittings on the same shipment will be sold for nearly double that rate.

The history of pipemaking in the United States, is a checkered one—the mortality of plants is high and, from the nature of the industry, plants must be large to live at all. In spite of the fact that the best processes must be used to turn out this rather strict specification material, pipe is easy to make and a pipe plant is more of a tonnage mill than the really high class specialty foundry it should be. Every time, therefore, that the demand for pipe is strong new shops spring up, only to close up when the demand has ceased but the financial damage to the more permanent plants has been done. Both the South and the North have had abundant experiences of this kind, and when recently a northern public service corporation gave its order to France, the pipe plants thus adversely affected were content to have this occur rather than see a plant started to supply the surplus demand.

The heavy fluctuations in the production of cast iron pipe, because of the alternation of bad and good times in this country also the irregularity with which orders are placed for extension requirements of the large municipal water supply developments, have tended to put out of business all those establishments that were not advantageously situated for either rock bottom cost of supplies, or specially good shipping locations. Thus, while the southern plants, located in the Birmingham district, have the advantage of cheap pig iron, coke and labor, those of the Delaware river can ship by water all over the world. To obtain a steadier production, individual manufacturers have tried to branch out into special lines to have cast-iron pipe replace steel pipe. Much of the conduit work in oil refineries is made of cast iron; for corrosive waters, even where high pressure is involved, cast iron does better than steel; and for some purposes cast-iron pipe is now furnished with a cement lining, to prolong its life.

Centrifugal Casting a Novelty

Perhaps the most striking development, in recent years, in this industry has been the manufacture and introduction of centrifugally cast pipe. Two distinct methods are now in use, and both are in daily operation on a commercial scale so far only in Birmingham, Ala. The original plant of the first process introduced in the United States is at Burlington, N. J. it is understood that this plant is to be greatly enlarged in the immediate future. This process is named, from its inventor, de Lavaud, and consists in rotating a steel mold at high rate of speed introducing therein the proper quantity of molten iron, which through centrifugal force is spread over the mold and thus makes the pipe. The other centrifugal process, the so-called sand-spun method, substitutes a sand lined mold for the steel in the de Lavaud method; it thus gets a closer approximation to the old way of making pipe. Both methods obviate the use of cores. The chilling effect of the steel mold on the molten iron is overcome by a subsequent short anneal at high temperature.

The use of centrifugally cast iron pipe is spreading rapidly. The idea is old for patents in England date back a hundred years. The developments, however, were never successful commercially, until de Lavaud worked out a combination of detailed operations that overcome the difficulties of pouring iron into a metal mold and getting serviceable results. The main trouble was found in getting the molten metal to spread evenly over the inner surface of the rapidly revolving steel mold within the time available before this metal would set. The object was accomplished by introducing all the way into the mold a refractory lined spout to carry the molten metal from the special ladle, which held the right amount of iron, and withdrawing at a uniform speed while the metal was flowing into the mold. This gave a flat spiral of metal which remained fluid long enough to have the edges jointed without a cold shut and thus made a perfect pipe. The indications of this spiral formation can be seen on the inner surface of the pipe.

The bell end of the pipe is fashioned by placing a core of the proper shape in the far end of the mold; to allow withdrawal after setting, the spigot end of the pipe is left straight. A groove can be cut into the pipe subsequently to provide for the joint. The mold is made of nickel-chrome steel with about 0.30 per cent carbon, and is revolved by a Pelton wheel attachment, which allows great flexibility in operation. Cammen has given a formula for the speed of revolution for pipe of various diameters, thus:

R.p.m.$=1550 \div \sqrt{R}$, in which R is the inner radius of the mold.

At the present time, centrifugal pipe is made in sizes from 6 inches to 12 inches in diameter, and preparations are under way to make 4 inch pipe.

In operation, two points of the apparatus need close attention: (1) The roller bearings of the mold require the best skill of the steel metallurgist and heat treater in their production. (2) The molds, through constant heating and cooling of the inner surface develop fire cracks, which eventually make the withdrawal of the pipe difficult; hence their life is limited, though some astonishingly long runs have been recorded. As the pipe are withdrawn from the molds, they roll automatically into the annealing oven where they remain for 20 minutes. The oven is maintained at a temperature of 1750 degrees Fahr. The revolving of the pipe prevents bending. From the nature of the process, the walls of the pipe are not thick; the carrying capacity of the steel mold in withdrawing heat is

---

Paper presented at annual meeting of American Institute of Mining and Metallurgical Engineers, Birmingham, Ala., Oct. 13-15. The author is consulting metallurgist, Watchung, N. J.

overtaxed when too much metal is introduced, thus time is lost in the final setting of the excess metal. On the other hand, centrifugally cast metal is very dense and sound, so that the strength is higher; while through a subsequent anneal the machinability of the metal is restored where the metal mold has been used. The density and nature of the metal, it is claimed, retard the influences for corrosion of the pipe, so that the risk otherwise taken in laying many miles of a lighter pipe may not be serious. The future alone can show if this is so.

Centrifugally cast pipe has a manufacturing cost fully as large as that of sand cast pipe, for while the core is obviated the use of the metal molds means an annealing expense. Further, there is the royalty under the several patents. The advantages of centrifugally cast-iron pipe, with steel molds are: (1) Because of its lightness more miles of the pipe may be laid for the same cost; (2) higher quality of the metal, all impurities being driven inward as the metal sets against the metal mold surface, as also from centrifugal action; (3) less corrosibility; (4) avoidance of a core; (5) reduction of labor in manufacturing; (6) saving in foundry space. The disadvantages would seem to lie: (1) In the possibility that improperly annealed pipe can get through occasionally; (2) that it is not a convenient commercial proposition to make this kind of pipe thick; (3) that the corrosibility is a question that will not be answered satisfactory for a number of years; (4) that the testing of this class of pipe is still unsolved. These objections by no means militate against the development of this product, but are given to show that side of the problem. It is unquestionably true that cast iron, when poured into a metal mold, does not get the same chance for the unrestricted development of its physical qualities as when going into sand molds.

Sand Spun Process Slower

The sand spun cast-iron pipe is just appearing on the market. Here, the revolving mold consists of a steel container (flask) lined with sand of the kind ordinarily used in the pipe foundry. Cores for bell and spigot are placed in the ends of the mold and the metal is poured into the mold without the use of a special spout, as the iron has time to spread properly before setting. The somewhat damp sand surface of the mold is dusted automatically with a little cement, which hardens the surface sufficiently to withstand the cutting of the molten iron until the velocity of the mold has been acquired. When set, the pipe is withdrawn with the destruction of the sand lining of the mold so that the mold must be relined each time with new sand. But the iron has the advantage of setting as it would in the ordinary sand casting process apart from the centrifugal action on the metal itself. In this process, also, no core is used, in addition no annealing is necessary.

Appearance Not as Good

The process, while turning out pipe commercially, is not fully developed as two points require some special safegarding. Thus, when the ladle of metal is poured into the mold in either the revolving or from the quiet state into the revolving, it takes a little time for the molten iron to acquire the same velocity as the mold; during this period the iron repeatedly drops back into the pool on the bottom. This effect, and the time required for the metal to set, which is greater than when iron goes into a metal mold, approximate what happens when iron is poured into an open-sand mold. There is more or less surface oxidation, with bad looking surfaces resulting. Inasmuch as slag and dirt are forced inward through centrifugal action, the inner pipe surface is affected correspondingly. To offset the difficulty of marketing the pipe with this defect in appearance, the pipe is lined with cement, which fastens to the pipe by reason of this roughness.

The advantages of the sand spun cast-iron pipe seem to be the following: (1) Molten metal gets time to set properly, as in sand molds; (2) added advantage, of density from centrifugal action; (3) avoidance of the core by the centrifugal method; (4) ability to make thick pipe if desired, and to have a spigot end; (5) no special difference in corrosibility as compared with ordinary cast-iron pipe, nor requirement of higher silicon, as with the de Lavaud method; (6) annealing is not necessary: (7) some labor reduction over ordinary sand method. The disadvantages are: (1) Because of the time of setting, considerable surface oxidation takes place, making the pipe interior rough; (2) necessity, until process has been devloped further, of cement coating of interior—though this, in itself is an advantage where cement-lined pipe is desired.

The future development of these two basic processes will be watched with the greatest of interest, as huge values are involved, and the material and product enter civilized life so vitally. For the moment the tonnage though respectable is but a small part of the production of this branch of the foundry industry, and centrifugal cast-iron pipe is made—so far as the writer is aware—only in Great Britain, the United States and Canada. Germany is testing a development similar to that of de Lavaud so far as one hears of it; France and Belgium have not entered this field commercially.

The total production of American cast-iron pipe, in 1921, could be set at 800,000 tons of which 250,000 tons were used as soil pipe and for conveying gas; 550,000 tons were used as water pipe, of which half was used in large city water supply work. At present, the output of the American plants (all of them are now running practially full) is 50 per cent higher, or probably on the basis of 1,200,000 tons per annum total. The distribution percentage is about on the same basis as it was for 1921.

The southern plants, with their estimated capacities for water and gas pipe, are as follows:

	Tons per annum
Plants of the United States Cast Iron Pipe & Foundry Co., at Birmingham, Anniston, Bessemer, Ala., and Chattanooga, Tenn.	400,000
American Cast Iron Pipe Co., Birmingham, Ala.	120,000
National Pipe & Foundry Co., Birmingham, Ala.	60,000
Lynchburg Foundry Co., Anniston plant, Ala.	25,000
Total	605,000

It is estimated that the northern and the southern production capacity are about equal at the present time, with contemplated large additions for centrifugally cast pipe in the North.

Foundry Supplies Double

The department of commerce announces that, according to data collected at the biennial census of manufactures, 1923, establishments engaged primarily in the manufacture of foundry supplies reported a total output valued at $10,247,864, of which $6,196,293 represents foundry facings, core compounds and core oil; $796,421, chaplets; $516,013, molding sand; $338,512, foundry equipment (flasks, sieves, brushes, ladles, etc.); $193,614, flux; and $2,234,011, other products, reported as foundry supplies but no doubt includes products similar to those previously mentioned. The output for 1923 shows an increase of 106.4 per cent as compared with 1921, the preceding census year.

In addition, foundry supplies are manufactured to some extent as secondary products. The value of such commodities thus made outside the industry proper in 1921 was $541,145, an amount equal to 10.9 per cent of the total value of products reported for the industry as classified.

Large Uses of Steel In Small Ways

ABOUT 200 tons of steel is used annually in the United States in the manufacture of dental drills and intruments, according to an estimate by one of the leading makers. Approximately 25,000,000 drills, or burs, of standard sizes, are made, and they average 410 to a pound of steel. The output of drills and burs of special sizes is about 1,000,000 in a year, and for these the average is 100 to a pound of steel. The estimate of the number of operating instruments produced in a year is 300,000, and about 16 can be made from a pound of steel. In addition to these, the number of forceps manufactured annually is 100,000, and the average pair requires about three pounds of steel. This makes a total of 195 tons of steel, and is believed to be a conservative estimate.

Steel also is used in the larger equipment of dental offices, and as there are 40,000 dentists in the United States, the total runs into hundreds of tons, although an approximation is more difficult than for drills and instruments. The United States census reports 264 manufacturers of dental goods, with products valued at $25,800,000 annually.

The steel used in drills burs and instruments is very high in carbon. For drills and burs it averages 1.25 per cent carbon; for the instruments 1.10 per cent, and for forceps 0.90 per cent. It is cold rolled, and the stock used for drills and burs generally is polished at the mill. It comes in 12-foot lengths. The material used is round, and the diameter for the standard sizes is 3/32-inch. For special sizes, rods ⅛-inch, 3/16-inch; 5/32-inch 7/32-inch and ¼-inch in diameter are used. The rods for the instruments are octagonal, providing a better grip for the hand, and they are 3/16-inch; 7/32-inch and ¼-inch cross section. There are approximately 1000 sizes and shapes of dental instruments, but all are about 6 inches long. There are 250 sizes and shapes of drills and burs but only two lengths. One is 1¾ inches while the other is ⅞ inch. The shorter is placed in the holder at right angles, for working in the rear teeth. The diameter of the standard size, 3/32-inch, is standard throughout the world. The smallest end size, that is the part used in cutting the tooth, for standard drills and burs is 19/1000-inch, or approximately 1/50-inch.

The manufacture is done within very close limits, micrometer measurements being taken at nearly every stage. Inspection is done with gages, magnifying glasses and microscopes. Precision has become so much a custom, and the various processes so systematized that production is obtained on a large scale, economically. The instruments retail to dentists at about 80 cents each, while the standard size drills and burs are sold to them at about $1 a dozen.

Most of the work is done in automatic machines, some of which are highly intricate. In the cutting of burs, the blank previously formed by a simple turning operating is placed in a chuck which holds it rigid. The cutter, a small steel disk sweeps across the tip of the blank. The chuck then turns the blank slightly, and the cutter repeats. When one revolution of the blank is completed, the cutting is finished. The entire operation requires about one minute. When finished, the machine stops. One operator tends four or five machines, placing the blank in the chuck, starting the machine by means of a small hand lever, and removing the drill when it is cut. The moving member carrying the circular cutter is adjustable for various kinds of burs. On some the cutting is done lengthwise; on other in a spiral direction, giving it the bud-like shape. Dental instruments also are fashioned in automatic machines, and worked in dies and small presses, depending on the various shapes required. The forceps are forged. While steel with a carbon content as previously indicated is in general use, some dental manufacturers are using special alloy steels, because of their hardness and cutting edge. In a large establishment using high-carbon steels, the instru-

BATTERY OF AUTOMATIC MACHINES USED IN CUTTING BURS ON DENTAL DRILLS

Dental Drills

THIS is the twenty-fifth of a series of articles dealing with some of the thousands of obscure uses of steel which in the aggregate go a long way toward absorbing the great American tonnage, and in proclaiming steel the universal metal. The first article on "Corsets" appeared Nov. 22. Other articles were "Pins," Dec. 6; "Pens," Dec. 20; "Cotton Ties," Jan. 17; "Steel Wool," Jan. 31; "Toys," Feb. 14; "License Plates," Feb. 28; "Spinning Rings and Travelers," March 13; "Hypodermic Needles," March 27; "Card Clothing," April 10; "Shoe Steel," April 24; "Tie Plates," May 8; "Crushed Steel," May 22; "Tacks," June 5; "Skates," June 19; "Knives and Forks," July 3; "Phonograph Needles," July 17; "Surgical Instruments," July 31; "Fence Posts," Aug. 14; "Needles," Aug. 28; "Eyeglass Cases," Sept. 18; "Golf Clubs," Oct. 2; "Fishing Tackle," Oct. 16, "Mechanical Pencils," Oct. 30.

ments are hardened in a gas-fired furnace, using a lead bath to a temperature of 1450 degrees Fahr., while the tempering is done in an electric furnace, with temperature varying from 410 to 600 degrees. Drills and burs also are hardened in a gas-fired furnace, while tempering is done in an electric furnace. An ingenious electric furnace is one where the drills are fed through the furnace automatically. When the drill acquires a certain degree of heat, it is automatically released and falls out of the furnace, and into a quenching solution. Manufacturing operations are highly specialized. Considerable work is done by hand. In one operation, illustrating the character of the fine workmanship required, it is necessary to place a file-like surface on the flat end of an instrument. A workingman with a magnifying glass, and using a fine file cuts the lines or ridges. He uses his left thumb to gage the spacings and they are 1/80-inch apart. At one stage in the making of instruments local tempering is done over a small bunsen flame, and the workman knows when he has tempered the steel properly by a certain bluish tint, acquired by the metal. Following the war there was an inflow of European made dental goods but as American manufacturers now are supplying most of products used in the United States, business is satisfactory.

Germany's Position in Machinery Trade

(*Concluded from Page* 1308)

chinery it shipped in 1913. The old markets that were lost during the war have not been regained in spite of the fact that exports from the United States increased from $88,000,000 in 1913 to $125,500,000 in 1923. Clearly German manufacturers are experiencing great difficulty in cultivating foreign markets and American manufacturers are justified in correspondingly strengthening their export efforts.

During recent months certain peculiarities of the German situation, in large measure, have been cleared up and American exporters can now look to the future with greater confidence. Among these is the price situation. A few months ago reports were frequently received of instances where German quotations were a mere fraction of the American level. In exceptional cases more reports of this character may be received. But, generally speaking, it seems to be clearly established that German costs are now above world market levels, and in cases where machinery has to be built after order the prices will probably be in line with or above quotations from other countries. On the other hand, money is very tight in Germany, and in cases where manufacturers are still carrying stocks produced when the mark was low, decreased quotations may be expected.

For a time it appeared that German manufacturers had been able to eliminate their overhead charges through the decline of the mark and would be able to quote corresponding prices. This has, at least in part, been overcome by the Dawes' arrangement by which German industry is bonded in gold to meet reparations payments. It is difficult to estimate the practical effect of this burden, which for the machinery industry is 17 per cent of the income tax for 1924, and the full interest charges will not be collectable sooner than 1928. However, it is clear that German business is gradually working back on to a sound money basis.

In earlier postwar years, German exporters enjoyed special advantages because of special railway rates, broad subsidies and through banking facilities that enabled them to quote liberal terms of payment. These advantages have now largely been eliminated, the railways are to be self supporting, while on the financial side interest rates are so high as to make discounting impracticable and German exporters are now most anxious to secure prompt payment in most instances. As a result, Americans in foreign trade find their competitors operate on more businesslike lines than has sometimes been the case and foreign business is correspondingly more attractive. These developments have now reached the point where German manufacturers are complaining that higher freight rates, higher taxation, bad financial conditions, etc., make it difficult for them to export successfully, and claiming that manufacturers in America and England are in a position to grant credits of three to five years now demand banking facilities that will make it possible for them to do likewise. This seems a strange reversal of the reports published only a few years ago.

Even though American manufacturers are not in a position to grant unbusinesslike terms in connection with their export business, they will find the new German competition a great improvement over the practices of prewar years, and also the earlier postwar years.

To Reclaim Gun Barrels

Reclamation of worn out machine gun barrels by plating the bore with nickel or other suitable metal and then rerifling has been suggested by the bureau of standards, of the department of commerce. This process was tried at the bureau a few years ago, but at that time proved unworkable. Progress in the science of electroplating has been very rapid in recent years, however, and it is hoped that what was impossible then may be possible within a few years.

Gun barrels wear out through erosion of the rifling bands, and when these are worn down to a certain point the gun no longer is accurate. If the rifling could be rebuilt the gun again would be serviceable. This, the bureau hopes, can be done if a sufficiently hard and dense deposit can be plated into the bore. The metals considered best for the purpose are nickel, cobalt, iron and chromium.

Most of the experiments were conducted with nickel because of the more advanced stage of nickel plating compared with that of other metals. A taut platinum wire centered in the bore, was used as an anode, and in order to furnish nickel a stream of fresh solution was circulated through the barrel.

Map Simplifies Plant Maintenance Work

Plant maintenance has developed to such importance that today specially trained men are employed to handle this work. To assist those who are charged with the maintenance of buildings and equipment in large institutions the Truscon Laboratories, Detroit, have prepared a wall chart, or "maintenance map", which shows in detail the various requirements of building and gives suggestions relating to each case.

The map consists principally of a large colored cross section of a modern manufacturing building; each maintenance requirement being indicated by a system of numbers and arrows. Features on the large cross section are further detailed and emphasized by smaller illustrations at the bottom of the map. Immediately below the large cross section is an outline of maintenance requirements subdivided into classifications into which the subject naturally falls, namely, basements, exteriors, floors, etc.

Below the outline is a section devoted to careful information, containing data on such subjects as quantities of paint and varnish required for various surfaces; amount of cement, sand and gravel required for various concrete and cement mortar mixtures; weights of building materials per cubic foot, etc. The map is printed in four colors on heavy enamel paper, is 22 inches wide and 32 inches high and is finished with metal strips top and bottom and a wall hanger attachment. Copies of the new map will be sent all executives who address the laboratories at Detroit.

Struthers Furnace Takes Time on Interest

Youngstown, Nov. 11.—Struthers Furnace Co. has availed itself of a period of 30 days grace in the payment of interest due on $1,500,000 8 per cent bonds outstanding on Nov. 1. Unless the interest is paid on Dec. 1 bondholders will organize a protective committee. The company owns the Anna stack at Struthers, O., with a monthly capacity of 16,000 tons. It met severe losses during the last three and half years. The property is situated between the East Youngstown and Struthers plants of Youngstown Sheet & Tube Co. and in the event of a sale it is logical to assume that the latter company will be interested.

Rebuilds Annealing Units in Malleable Plant

An extensive program of reconstruction and expansion in the annealing department of its Dayton plant has been launched by the Dayton Malleable Iron Co., Dayton, O. The present annealing equipment will be replaced, but the work is not permitted to interfere with the functioning of the plant or to reduce even temporarily the capacity of present equipment. The units are designed and placed so that a 100-per cent increase in capacity will be accomplished without the use of more floor space than is now occupied.

Plans and specifications, which were prepared by the officials of the company, call for the adoption of powdered coal as fuel and the inclusion of thorough insulation against heat loss. Insulating material supplied by the Celite Products Co., Chicago, is being used throughout the new equipment.

The floors are constructed of 6 inches insulating concrete placed over the concrete foundations and covered with a course of paving brick. The base and inner side wall of the flues are composed of 4½ inches of the same material, faced with firebrick.

The 18-inch side and rear walls of the furnaces, beginning at the base of the flues, are made up of a 4½-inch course of insulating brick faced with 9 inches of first quality firebrick and backed with 4½ inches of used firebrick. The buckstays are 100-pound rails placed on 2-foot centers. Used fire brick is believed to have a decided advantage over red brick in the outside course of these walls as it is less expensive and more strongly bonded walls result since all the brick used are of uniform size. The high conductivity of firebrick may be disregarded since the walls are insulated.

The 9-inch firebrick arches are covered with 5 inches insulated natural brick laid in two 2½-inch courses. The doors are of insulating concrete and therefore monolithic, being 8 feet high and 12 feet wide by 9 inches thick. The use of this material for the doors, in addition to eliminating a great source of heat loss, reduces the weight. Because of this reduction in weight, the doors are hung in frames, counterweighted, and raised or lowered by one man with a small chain hoist. The ease with which the doors may be handled supplements the insulation in maintaining perfect control of temperature during the cooling period.

Awards River Craft

Pittsburgh, Nov. 11.—The Carnegie Steel Co., is adding another steamboat to its river fleet and is increasing its barges from 221 to 255, a contract for 34 having been awarded its constituent, the American Bridge Co. The contract for machinery and boilers for the boat has been awarded the Federal Shipbuilding Co, Kearney, N. J., and the American Bridge Co. will construct the hull at its Ambridge, Pa., boat yard, after which it will be towed to the marine ways of the Carnegie company at Coal Valley, Monongahela river, where the machinery and boilers will be installed and equipment added. The new boat is expected to be ready for the Pittsburgh, Mingo Junction, Bellaire towing trade by Dec. 1.

The dimensions of the boat are: length on deck, 171.105 feet; length overall, 200.125 feet; molded width, 38.10 feet; width overall, 39.11 feet; depth of hull, 6.45 feet.

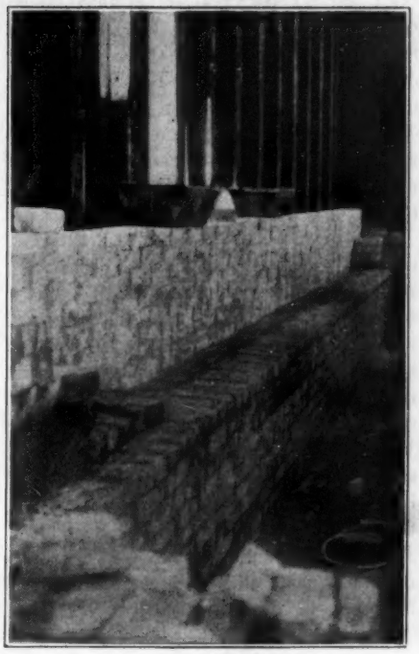


FIG. 2—THE SIDE WALL CONSISTS OF 13½ INCHES OF FIRE BRICK AND 4½ INCHES OF INSULATING BRICK

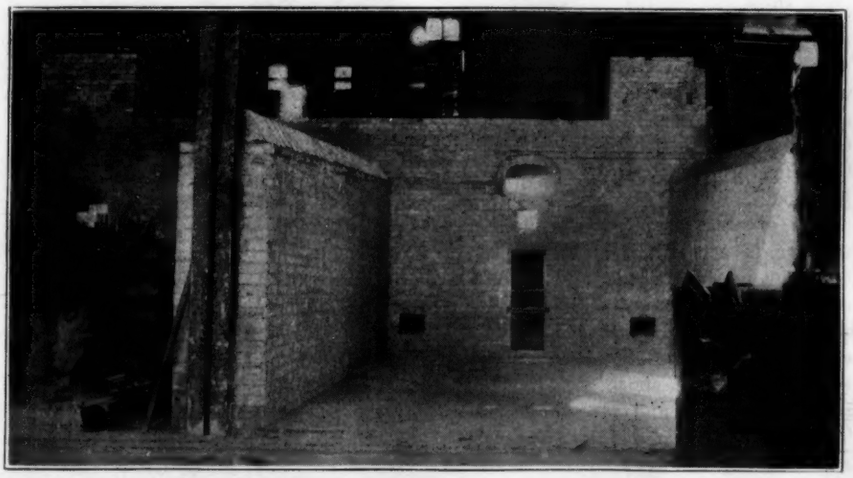


FIG. 1—VIEW OF ANNEALING FURNACE UNDER CONSTRUCTION, SHOWING SIDE WALL COMPLETED AND 6 INCHES OF INSULATING CONCRETE IN FLOOR

Steel Employment Gains; Earnings Drop

Washington, Nov. 11.—Despite the fact that the iron and steel industry in September showed gains in the number of men employed as well as in the payroll totals, the average individual earnings of the employes dropped during the month from $130.36 in August to $124.42 in September, according to figures of the United States labor department, with comparisons of wages and employes in 52 industries.

The gain in the number of employes in the 213 steel plants considered in the compilation was 3 per cent. Taking the iron and steel group as a whole, a gain of 2.5 per cent is shown in the payroll totals. The payrolls at these plants in the half month ended Sept. 15 totaled $14,999,921, as compared with $13,649,206 in the corresponding half month in August. The machine tool group reported an increase of 12.6 per

cent and 13 per cent in employes and earnings, respectively. The structural ironwork group gained three-tenths per cent in employes in September, but dropped 1.6 per cent in payroll totals. The foundry and machine shop products group in the same period dropped 1.2 per cent in number of employes and eight-tenths per cent in payroll totals.

Ten of the 12 groups of industries considered by the labor department showed increases in employment in September and 11 of the 12 groups showed increases in payroll totals. Continued improvement in activity in manufacturing industries is indicated by comparison of recent monthly changes. Between June and July only seven industries showed increases in employment and 35 industries showed increases in payroll totals. Between August and September, 39 of the 52 industries showed increases in employment and 41 industries showed increases in earnings.

Colombia Market Grows

Washington, Nov. 11.—Increased sales of industrial machinery have featured the steady growth in demand for American equipment in Colombia, according to the industrial machinery division of the department of commerce. The present trade is at a much higher level than in prewar years. The government of Colombia is spending $5,000,000 for railways and public works each year and this is expected to increase demand for construction equipment. American machinery exports to Colombia increased about 16 per cent in 1923 over 1922, total figures gaining from $1,537,239 to $1,792,940.

Coal Mine Fatality Rate Higher for September

Washington, Nov. 11.—Accidents at coal mines in the United States in September resulted in the death of 186 men, according to reports furnished by state mine inspectors to the department of the interior, through the bureau of mines. As the output of coal in September was 48,624,000 tons, the fatality rate for the month was 3.83 per 1,000,000 tons mined, as compared with 2.94 for September last year, and an average rate of 3.60 for September during the 10-year period 1914-1923.

Reports covering the first nine months of 1924 show a total of 1821 lives lost in accidents at coal mines, as compared with 1942 in the corresponding months last year. The fatality rate for 1924 to the end of September stands at 4.51 per 1,000,000 tons, as compared with 3.89 for the same period last year. For bituminous mines alone the average rate in 1924 for nine months was 4.34, as against 3.59 in 1923. For anthracite mines alone the nine-month average rate was 5.34 as compared with 5.68.

Canadian Iron Output Is at Steady Rate

Washington, Nov. 11.—Production of pig iron and ferroalloys in Canada was maintained during September at practically the same level as in August, 19,205 long tons of foundry, 2997 tons of basic and 1898 tons of ferroalloys having been turned out by Canadian furnaces. Although there are 20 blast furnaces in the Dominion, only two were active at the beginning of September, one having been placed in operation during the month. Production for the first nine months of 1924 included 338,080 tons of basic, 138,070 tons of foundry, and 42,710 tons of malleable pig iron, and 22,058 tons of ferroalloys.

Of the 581,771 tons of steel ingots and castings produced during the first nine months of 1924, 556,545 tons was open-hearth basic ingots and 1938 tons was made by other processes, 16,597 tons was open-hearth basic castings, 782 tons, open hearth acid castings, 1144 tons, bessemer castings, and 4705 tons, electric castings.

Accidents at metallurgical plants in the United States in 1923 resulted in the death of 58 men and the injury of 8476 others, according to statistics compiled by the department of the interior. The figures constitute a fatality rate of 0.96 and an injury rate of 141 per thousand full-time, 300 day, workers.

Clean Reflectors Essential in Lighting

BY ALLISON J. THOMPSON[1]

IN A survey of lighting conditions in about 400 industrial establishments made by a group of electric lamp manufacturers, it was found that in many plants the advantage of good lamps and reflection is largely los because no systematic method of cleaning them is employed. The power of a reflector is easily and rapidly lost through the accumulation of dirt—and the measure of the value of the reflector is in the ability of its reflecting properties to bend the rays of light back and deliver them without loss of intensity, between useful angles in the working area.

Obviously it is as necessary to restore these reflecting properties whenever they become impaired by dirt as it is to refill a gasoline tank when it becomes empty. It would be as absurd to build an automobile without making provision for refilling the tank as to install a reflector without making adequate provision for cleaning, because nobody ever has found any kind of dirt that will save light.

Because no provision is made for keeping them clean, thousands of high-grade reflectors, all over the country now are rotting away with dirt and rust, without performing the work for which they were purchased. Dirt destroys a reflector in that it collects corrosive elements. Dirt also prevents the reflector from performing its proper function.

The greatest problem in lamp maintenance is accessibility, but this work can now be done easily and economically by installing lamps on safety lowering switches or disconnecting hangers, enabling them to be lowered away from the electric circuit for the cleaning of reflectors and renewal of bulbs. This eliminates climbing and electrical hazards, by keeping the man on the floor and entirely out of reach of the electric circuit.

A clean bulb in a dirty reflector does not afford much light to the workers. No attendant is likely to wash a reflector, and polish it, without wiping off the bulb. Therefore there is no occasion to worry about the bulb if the reflector is kept clean, for then the bulb will be taken care of automatically.

[1] The author is president of the Thompson Electric Co., 226 St. Clair avenue, Cleveland.

To Manufacture Tubing

Harter Rolled Metals Co., Goshen, Ind., recently incorporated for $75,000, will engage in the manufacture of all kinds of metal tubing, as well as to operate rolling mills for the cold-rolling of special metal sections. Angles and channels, automobile moldings, welded, butt seam and lock joint tubing, are some of the products to be manufactured. E. C. Harter is president of the newly formed company, E. C. Crow, vice president; V. G. Cawley, secretary and M. E. Crow, treasurer. The officers constitute the board of directors.

Sloss Closes Deal

Alabama Co. Not Merged But Owned as Subsidiary-Lien Notes Issued

Completion of the purchase of the properties and assets of the Alabama Co. by the Sloss Sheffield Steel & Iron Co. is marked by the sale by Goldman Sachs & Co. of New York of $2,500,000 worth of 5-year 6 per cent purchase money lien notes dated Aug. 1, 1924 and to mature Aug. 1, 1929. The price is 101¾ and accrued interest, to yield over 5.55 per cent.

The purchase is not in the form of a merger and the Alabama Co. will be continued as a separate corporation with $1,775,000 mortgage bonds outstanding. In the circular announcing the offering of the notes, J. W. McQueen, president of the Sloss Sheffield Steel & Iron Co. makes the following statement:

"These purchase money notes will be direct obligations of Sloss Sheffield Steel & Iron Co. and as such will rank equally with the outstanding $4,477,000 10-year 6 per cent sinking fund gold notes due Aug. 1, 1929 and with the $1,200,000 serial 5 per cent purchase money notes, $400,000 due each November 1, 1926 to 1928 inclusive. These purchase money notes will also be secured by a purchase money lien on all the real estate and fixed assets to be acquired by the company from the Alabama Co., junior only to the lien of $1,775,000 mortgage bonds of the Alabama Co. outstanding in the hands of the public.

"The pro forma consolidated balance sheet of the company as at Sept. 30, 1924, after giving effect to the purchase of the above mentioned assets of the Alabama Co., shows net tangible assets applicable to the funded debt of the company (including this issue), after deducting the $177,500 Sheffield Iron Corp. first gold 6s and $1,775,000 total of the three issues of mortgage bonds of the Alabama Co., to which certain of the properties are subject, in excess of $32,500,000, as compared with $8,177,000 of funded debt of the company (including this issue). Current assets are shown to be in excess of $5,325,000 and current liabilities not in excess of $481,000, with a current ratio of more than eleven to one.

"Sloss Sheffield Steel & Iron Co. has earned a profit in every year since its incorporation in 1899. The annual average of the combined net profits of Sloss Sheffield Steel & Iron Co. and the Alabama Co. for the five years and nine months ended September 30, 1924, after deduction of depreciation and depletion, but before deduction of Federal income taxes and interest charges, was $2,238,486, or more than 3.7 times the interest charges on the entire present funded debt of the company (including this issue), and the interest payable on the outstanding mortgage bonds of the Alabama Co. and the Sheffield Iron Corp., which are secured by liens on property now owned or presently to be acquired by Sloss Sheffield Steel & Iron Co. Such combined profits for the year ended December 31, 1923 were $3,577,203, or more than 6 times such interest requirements and for the nine months ended Sept. 30, 1924, were $1,660,394, or more than 3.7 times such interest requirements for the period. It is estimated that such profits for the full year 1924 will approximate $2,085,000."

Sloss Sheffield Steel & Iron Co. was incorporated in August 1899 under the laws of the State of New Jersey. The business was first commenced in 1882 under the name of the Sloss Furnace Co. This company was consolidated with two other companies in 1887 as the Sloss Iron & Steel Co., which in 1899, was consolidated with several other companies to form the present company.

Reorganizing Steel Cartel

Washington, Nov. 11.—The reorganization of the German steel cartel and of the associated cartel in the metal finishing industries is assured, although the movement has not been completed, Commercial Attache Herring cables the department of commerce from Berlin. On the other hand it is believed that rumors of a pending French-German or general European steel combine are entirely unfounded.

Let Furnace Contracts

Work is getting under way in earnest at the site of the new blast furnace for the Mystic Iron Works in Everett, Mass., and contracts for equipment are being let as fast as possible. During the past week contract for a 300-foot, 8-ton ore bridge was let to the Mead Morrison Co. of East Boston, at approximately $180,000 and more than $200,000 worth of electrical equipment was purchased from the General Electric Co. This included a motor generator set, a turbo-generator set, and a turbo-blower. Engineers are preparing specifications for other equipment and many contracts are expected to be let in November.

Receiver Is Named

A friendly receivership was granted the Pennsylvania Engineering Works, New Castle, Pa., recently. William Lewis, long identified with the steel industry, has been appointed as receiver. This company specializes on the construction of blast furnaces, ladles, hot metal mixers, bessemer plants, open-hearth furnaces and steelworks equipment. It recently engaged in the fabrication of tanks for oil storage purposes and steel plate work of a diversified character.

Pyramid Press, Inc., 64 West Eleventh street, New York, has filed liabilities of $16,175 and assets of $5635 in bankruptcy proceedings.

Immigration Continues To Fall Off

Washington, Nov. 11.—Latest figures on immigration to the United States under the new 2 per cent immigration law show a decided falling off in the number of incoming aliens. The latest figures available from the bureau of immigration are for August, the September and October figures being incomplete. The total for August was 23,290, not including students, travelers, business men, ministers and others.

Of the grand total of immigrants coming to United States shores in August, 3951 were classified as skilled laborers. Of this number, skilled labor for the iron and steel industry numbered only 120, and metal workers, other than iron, steel and tin, totaled only 33. Since July 1, when the 1924 immigration law went into effect, a noticeable decrease in the flow of immigration to the United States has developed.

Canada, which has no quota restrictions, leads among the nonquota nationalities in the number of immigrants to the United States, and Canadian immigration is expected to increase. Under the new law, 40 nationalities have annual quotas of only 100, which is the minimum quota for any nationality. Nine other nationalities have annual quotas of less than 500, and four nationalities have quotas of less than 1000.

A total of 9978 immigrants was charged to the quota countries in August, and only 585 in July. Immigration for the fiscal year from the nearly 70 countries having minimum quotas must not exceed 164,667. From the nonquota countries, the August immigration totaled 16,467, of which nearly three-fourths, or 10,560, came from Canada. The nonquota countries, besides Canada, are Newfoundland, Mexico, Cuba, Dominican Republic, Haiti, Canal Zone, and independent countries of Central and South America. Immigration since Jan. 1, this year, has showed a marked monthly decrease as compared with corresponding months last year. For instance, the total for the last six months of last year reached 499,863, while the total immigration to the United States in the first six months this year amounted to only 207,033. Immigration by months this year has been as follows: January, 33,878; February, 29,901; March, 35,585; April, 38,375; May, 32,985; June, 36,309; July, 11,661, and August, 23,290.

Under the 1924 immigration law, Germany has an annual quota of 51,227; Great Britain and northern Ireland, 34,007; Irish Free State, 28,557; Italy, 3845; Czechoslovakia, 3073; Denmark, 2789; Netherlands, 1648; Norway, 6453; Poland, 5892; Russia, 2248; Sweden, 9561; and Switzerland, 2081.

Bloc Control Ends in Congress

Election Gives Republicans Control in Both Houses, Though by Narrow Margin —Thirteen New Senators Result of Recent Balloting—Several Business Leaders Numbered Among Newcomers

BY F. B. PLETCHER

WASHINGTON, Nov. 11.—While the majority of the present administration in the senate will be narrow, considering those senators who may be expected to bolt, and the majority of the Republicans in the house will be only fairly comfortable, the fifty-ninth congress should see the abolition of bloc control.

Thirteen new members will enter the senate as the result of the elections last Tuesday. They are Charles S. Deneen of Illinois, Republican, lawyer; T. Coleman du Pont, Delaware, Republican, industrialist and engineer; Frederick H. Gillett, Massachusetts, Republican, lawyer; Guy D. Goff, West Virginia, Republican, lawyer and former shipping board member; W. H. McMaster, South Dakota, Republican, banker; Rice W. Means, Colorado, Republican, lawyer; Jesse H. Metcalf, Rhode Island, Republican, industrialist; W. B. Pine, Oklahoma, Republican, industrialist; Fred M. Sackett, Kentucky, Republican, lawyer and industrialist; Thomas D. Schall, Minnesota, Republican, lawyer; Cole L. Blease, South Carolina, Democrat, lawyer; Sam G. Bratton, New Mexico, Democrat, lawyer; and L. D. Tyson of Tennessee, Democrat, lawyer and industrialist.

Pine of Oklahoma is a successful oil operator, and was opposed by former Governor Walton, who had been ousted as governor and who gained considerable attention in the public eye by his opposition to the Klan. Sackett of Kentucky is interested in a number of industrial enterprises in that state. Much of his support in the election was obtained from employes in the various concerns in which he is interested. Tyson of Tennessee, also is one of the new industrial men in the senate. He is interested in several enterprises in his native state and is a veteran of both the Spanish-American and World wars.

Senator-elect du Pont has been engaged extensively in coal and iron mining in Kentucky and in the construction and management of street railways. From 1902 to 1915 he was head of the E. I. du Pont de Nemours Powder Co. of Wilmington, Del.

Besides being an oil operator, Senator-elect Pine is the head of a tool company, vice president of a bank, and the founder of a glass factory at Okmulgee, Okla., Senator-elect Goff also was federal district attorney under President Taft, Wisconsin state attorney general and a special prosecutor in President Wilson's administration. He also served for a time as assistant attorney general in President Harding's administration.

The author is editorial representative at Washington of IRON TRADE REVIEW.

Metcalf of Rhode Island is a leader in the textile industry of New England, being a woolen manufacturer. At present he is president of the Wansuck Mills and the Auburn Woolen Co. He also is on the boards of banking and insurance concerns.

The election meant an advancement of two of the incoming members, Senators-elect Gillett of Massachusetts, and Schall of Minnesota, both of whom are coming from the house, where Gillett was speaker. Schall, an original Roosevelt follower, won over Magnus Johnson, the Farmer-Laborite. Schall lost his sight some years ago in a power plant explosion at Fargo, N. D. Gillett is advancing to the senate at the expense of Senator David I. Walsh of Massachusetts, who was one of the extreme partisans in the senate.

Forty-nine votes are necessary in the senate for a majority. The new senate consists of 54 Republicans, with one seat vacant for Connecticut, which probably will be filled by a Republican. The Democrats have 40 votes in the senate, as against 43 in the present senate personnel, and the independents number two.

In the house, 218 votes are necessary for a majority. The Republicans in the house in the fifty-ninth congress will number 241, with the Democratic total 190. Independents in the house have a strength of four votes. Thus the Republicans in the house have a fairly good working majority, although some of the members listed as Republicans will vote with the La Follette-Nelson bloc. Some of the senators listed as Republicans include such men as Frazier, Ladd, Couzens and Norris, who cannot be counted upon to vote regularly with the Republicans. This makes the senate control by the Republicans decidedly close. Nevertheless, the Republicans in the next congress have a strong opportunity within their grasp and likewise no little responsibility. It will not be so easy to dodge behind alibis of bloc control.

Not much can be expected in the way of legislation from the "lame duck" congress, which will meet Dec. 1 and continue until March 4. One of the jobs confronting this session, and one which will consume a large part of its time, will be the enactment of the appropriation bills for the next fiscal year, which will total about $2,750,000,000.

It is likely that some action will be taken to direct the interstate commerce commission to require reduction in freight rates to shippers, with special reference to rates on agricultural products. The Barkley-Howell railroad bill also will be up for consideration. The bill would end the existence of the railroad labor board and would set up in its stead regional boards of mediation and arbitration made up of representatives of railroad management and railroad labor, in which no representative of the general public would have representation.

It is considered doubtful whether much tax legislation can be accomplished in the short session, and it is understood that President Coolidge is averse to calling a special session.

Much slate-making has been done in the daily press since election in regard to the probable personnel of the President's cabinet after March 4. Contrary to reports, it is believed that Secretary of Commerce Hoover will remain, despite the fact that his continuance in the cabinet means a loss to him in a financial way. Likewise it is expected that Secretary of State Hughes will be asked to remain. Secretary Mellon is understood to have no thought of resigning, despite reports to that effect. It is probable that Postmaster General New and Secretary of the Interior Work may step out, and that William M. Butler of Massachusetts, chairman of the Republican national committee, may be given a cabinet berth.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

ELBERT H. GARY, chairman and James A. Farrell, president, of the United States Steel Corp. have had honors conferred upon them by Pope Pius XI. Bishop John M. Gannon of the Catholic Diocese of Erie, Pa., who has returned from a visit to Rome, brought with him a medallion by the famous medalist, Giocomo, as a gift from the Pope to Judge Gary, in recognition of his leadership in the industrial and commercial life of America. Bishop Gannon also brought documents conferring upon James A. Farrell, the knighthood of St. Gregory.

* * *

Charles Page Perin of C. P. Perin & S. M. Marshall has returned from a brief visit to France.

* * *

F. A. Park, vice president in charge of operations of the Singer Mfg. Co., 149 Broadway, New York, has gone to Europe for a brief stay.

* * *

George F. Eldridge has resigned as vice president of B. Nicoll & Co., 294 Madison avenue, New York. Mr. Eldridge had been with the Nicoll company for 24 years.

* * *

Maurice Owens, formerly in the mechanical department of the Continental Can Co., and with the Syracuse Supply Co., Syracuse, N. Y., has joined Crane-Schiefer-Owens, Inc., Buffalo, N. Y.

* * *

E. H. Lunde of the Federal Machinery Sales Co., Chicago, will specialize in sales and service work for the Geometric Tool Co., New Haven, Conn., in the Chicago district.

* * *

W. E. Hitchcock, recently elected a director and treasurer of the Bellis Heat Treating Co., Branford, Conn., is connected with the Atlantic Wire Co., that city.

* * *

Roscoe A. Ammon, who recently joined the Latrobe Tool Co., Latrobe, Pa., formerly was mechanical representative in Philadelphia for the Whitman & Barnes Mfg. Co., Akron, O., manufacturer of drop forgings, etc.

* * *

C. R. Trimmer, for many years identified with the tool steel business in the Middle West, has become manager of the office and warehouse of the Jessop Steel Co., Washington, Pa., at 609-13 Fulton street, Chicago.

* * *

K. E. Steinhauer, who prosecuted the Pittsburgh plus case against the United States Steel Corp., resigned from the federal trade commission, effective Nov. 7, to become manager of a financial and mortgage company in Los Angeles.

* * *

Dexter A. Tutein of E. Arthur Tutein, Inc., Boston, New York and Philadelphia, returned Nov. 1 on the BERENGARIA, from a three months stay in Europe. Mr. Tutein visited the various iron and steel centers in England, Sweden, France, Germany and Belgium.

* * *

Herbert Johnston, for many years with Armstrong Whitworth Co., Montreal, and recently in charge of the office at Windsor, Ont., of Pratt & Whitney Co., has been appointed manager of the Montreal branch of the John Morrow Screw & Nail Co., Ingersoll, Ont.

* * *

T. B. H. Askin has been appointed as sales manager of the intermountain division with headquarters in Denver for the American Manganese Steel Co., Chicago Heights, Ill. Mr. Askin had spent five years in active mill operation with a western mining company, previous to joining the American Manganese Steel Co.

* * *

George G. Titzell Jr., who has been resident sales agent at Kansas City, Mo., for the Carnegie Steel Co., Pittsburgh, has been made assistant district sales manager in St. Louis to succeed L. F. Miller, who resigned to become general manager of sales for the National Enameling & Stamping Co., St. Louis.

* * *

Theodore Pilger, Butte, Mont., has been appointed trade commissioner to Berlin, Germany, by Dr. Julius Klein, director of the bureau of foreign and domestic commerce. Mr. Pilger was a graduate of the Montana School of Mines and for the past 10 years has held various geological, metallurgical, minerological and mechanical positions.

* * *

R. C. Broach has been appointed southeastern district manager for the Heine Boiler Co., with offices at 709 Glenn building, Atlanta. His territory includes eastern Tennessee, North and South Carolina, Alabama, Georgia and Florida. Mr. Broach, a native of Atlanta, has previously been employed in the general sales department of the Heine company at St. Louis.

* * *

F. W. Bridges, organizer and general manager of the Shipping, Engineering and Machinery exposition to be held Nov. 23 to Dec. 3, at the Olympia, London, recently entertained a party of American engineers at an informal luncheon at the Machinery club 50 Church street, New York.

* * *

Thomas K. Scott recently was appointed midwest sales manager of the Taylor-Wharton Iron & Steel Co. with his headquarters in Denver. Mr. Scott attended the Columbia School of Mines in 1904, but left before completing the course to join the Cumberland Ely Copper Co. in Nevada. In 1908 he re-entered Columbia where he received the degree of engineer of mines. He also has been connected with the Inspiration Copper Co. and Miami Copper Co., being chief mining engineer of the latter until August, 1923.

* * *

Waldemar Dyrssen has been appointed chief engineer of the furnace equipment department and chief engineer of the forge and hammer welding department of the Blaw-Knox Co., Pittsburgh, manufacturer of steel products. Mr. Dyrssen was graduated from the Royal Technical university, Stockholm, Sweden, in 1908, as a metallurgical engineer and came to American in 1915, joining the United States Steel Corp. as a metallurgical engineer. Until his recent connection with the Blaw-Knox Co. he had been with the Steel corporation.

* * *

Courtney Williams has been appointed sales manager of the Orbis Corp., 60 Wall street, New York, which has been appointed American representative of the Societe Anonyme John Cockerill Seraing Belgium. Mr. Williams formerly was with the Bethlehem Steel Co., and succeeds Henry H. Barbour, formerly of the Lackawanna Steel Co. and the Consolidated Steel Corp., who had for a time been vice president of the Orbis Corp. in charge of sales. John R. Hinchliffe is president of the Orbis Corp. Oliver V. Mahan, treasurer.

Election of Coolidge Gives Country Its Greatest Opportunity

BY E. H. GARY

THE election of Mr. Coolidge to the presidency of the United States of America, by an unusually large majority, has furnished reason for a world-wide feeling of gratitude to a wise and merciful Providence that rules the destinies of humankind.

Since the end of the most terrible and destructive of all wars, there has been an abnormalized condition of mind which has threatened the very foundation of civilization. This has been noted in one form or another wherever the words and activities of men have been exposed. Of course, in a few words it is impossible, if proper at this time, to make specific and personal references.

Mr. Coolidge has been a steadying force and a living example in this country beyond that of any single person since the time of Lincoln. He has been discreet, unselfish, calm, dignified, patient and wise. With no feeling of enmity toward those who have been harsh and sometimes cruel in their criticisms, he has pursued a consistent course of propriety and fairness and with an eye single to the happiness, comfort and prosperity of all the people and to the glory of his country.

WITH this disposition and capability, he has won the respect and the confidence of the large majority of our citizens, as demonstrated by the election of Nov. 4. Lincoln said all the people cannot be fooled all the time. Mr. Coolidge has not attempted to fool any of the people any of the time. Therefore what he says and does hereafter will have the effect that follows the respect and the confidence which have been thus established. One of the best, the most emphatic and the most influential features of the late campaign has been that Mr. Coolidge has refrained from indulging in personalities, in rebuke, in complaint or in hostility. He has been perfectly natural, a Christian statesman and fearless leader. Such a man should have, and he will have, the support and assistance of the American congress and the American people.

After making these few observations it is proper, from the standpoint of a business man, to make practical application. As I have said probably more than once, of the highest importance in the minds of all the people, rich or poor, employer or employe, educated or uneducated, is reasonable and satisfactory provision for supplying the necessities of life. Unless all of us can obtain food, clothing and shelter, we are not inclined to listen to advice or instructions or consolation concerning our highest moral or spiritual hopes and aspirations. It is because of this that Mr. Coolidge has favored general prosperity without distinction or difference, based solely on merit; and it is because of this qualification in the national leader the people trust him, and what the people generally decide, our lawmakers and administrators will support.

NEVER before in the history of the world has any country had such an opportunity for advancement as the United States possesses just at this time. The fundamentals are here, the foundation has been laid. It is up to us, the people, to do our part.

What we need and must endeavor to bring about is more unity of purpose and action, less discord, higher standards, more honesty, more work, more energy, more charity, more conciliation, more self-denial.

From this time forward those who have been severely criticized, even though in many cases unjustly, should carefully consider all the criticisms which have been made with a determination to ascertain where and in what respect they have been wrong and to provide a remedy. Likewise those who criticize others should more carefully guard against unjust attack.

If capital has been arrogant, tyrannical or unreasonable, it must overcome its improprieties or iniquities, and for its own benefit, in self-defense, it must adopt principles of propriety and justice.

IF THOSE less prosperous have been unreasonable in their demands or complaints, if they have been unwilling to contribute their services toward their own necessities, they should be more diligent and more considerate, acknowledging the fact that unless capital is permitted to legitimately proceed in development and extension and utilization, the whole community must suffer.

In short, it is time for every single interest in every department of our existence, political, social, financial, commercial, industrial or educational to consider unselfishly and fairly all other interests with the desire and intention of benefiting the whole human race.

I trust the business men of this country will do their full part. It is certain President Coolidge will fully measure up to his responsibilities.

We have turned the corner. This country will be an example and an inspiration. It will probably retain a position of independence and will sacrifice no moral principle, but it will, as always, perform its duty in world affairs as required by the national conscience.

I look for great future business prosperity. If it does not appear, it will not be for lack of conditions and opportunity.

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

AMONG orders recently booked by the Standard Tank Car Co., Sharon, Pa., builder, seller and lessor of tank cars, are those for the Conley Tank Line, Pittsburgh, six cars; Misko Refineries, Laredo, Tex., two cars; Sun Co., Philadelphia, seven cars, and Caddo Central Oil & Refining Co., New York, one tank car. J. G. Turpie is assistant to the president of the tSandard Tank Car Co.

* * *

THE Norma-Hoffman Bearing Corp., Long Island City, New York, has opened its new plant at Glenbrook, Conn., which has been under construction for several months.

* * *

THE National Tube Co. has ordered from Arthur G. McKee & Co., Cleveland, a McKee-type revolving distributor for its No. 2 blast furnace at Benwood, W. Va. This distributor will be equipped with a new worm drive mechanism recently developed.

* * *

A NEW fireproof warehouse recently was completed by the Ferro Enameling Co., 4150 East Fifty-sixth street, Cleveland, allied with the Ferro Enamel Supply Co., that city. Increased scale of business necessitated expansion. R. A. Warner is president of the Ferro Enamel Supply Co.

* * *

ORANGE CAR & STEEL CO., Orange, Tex., has awarded contracts for constructing railway shops, machine shops, power house and store house at DeQuincy, La., a terminal of the company's Louisiana division. More than 200 tons of structural steel is on the way to the site for erection.

* * *

WESTINGHOUSE ELECTRIC & MFG. CO., East Pittsburgh, Pa., has received the contract for electrical equipment that is to be used in 40 cars, order for which has just been placed by the Long Island railroad. The total cost of the cars will be approximately $1,200,000 and the cost of the equipment to be furnished by the Westinghouse company is about $450,000.

* * *

NEW warehouse spans are being added to the plant of Joseph T. Ryerson & Son, Inc., Chicago, iron and steel interest. The spans will measure 72 x 360 and 100 x 280 feet, and will be served with three traveling cranes. The structure will be of brick, steel, and concrete. Additional space will house part of the reinforcing bar department as well as provide a larger area for structural stock.

* * *

JOHN H. MURPHY IRON WORKS, INC., New Orleans, recently incorporated for $400,000 conducts a boiler works at Broad, Perdido and Dorgenios streets, that city, and machine shops and offices at Magazine, Girod and Capdevielle streets. Pipe, fittings, valves, steam specialties and mill supplies are manutactured, as well as complete sugar plant installations. The company conducts also a manufacturing and contracting engineering business.

* * *

THE site of the former fabricating shop of the American Bridge Co., on St. Paul avenue, Milwaukee, measuring 198 x 310 feet, has been purchased by the Cordes Supply Co., 69 Second street, that city, a large manufacturer and jobber of steam and hot water heating and plumbing supplies, materials and appliances. The Cordes company is having plans and estimates prepared for a new shop, office and warehouse building, to be erected early next spring. Roy F. Cordes is president.

* * *

ANOTHER $1,000,000 hydroelectric project is announced in Wisconsin by the filing of an application by the Wisconsin Public Service Co., Milwaukee, for a permit to build its fifth water power plant on the Peshtigo river. A site of 180 acres at the Sandstone Rapids water power site, three miles north of Crivitz, Wis., has been purchased and a new dam and power house will be built as soon as the permit is granted. The Wisconsin company also has purchased the hydroelectric plant of the Crivitz Pulp & Paper Co., at another point in the Peshtigo river, from the Hoberg Paper & Fiber Co., Green Bay, Wis. Clement C. Smith is president, and J. P. Pulliam, general manager of the Wisconsin Public Service Co.

* * *

GEOMETRIC TOOL CO., New Haven, Conn., manufacturer of special machinery and tools for cutting screw threads, has sold to Arthur E. Bellis, its entire interest in the Bellis Heat Treating Co. Mr. Bellis is president of the latter company which will remove its offices to Branford, Conn. A wire annealing demonstration plant is being installed at the plant of the Atlantic Wire Co. W. E. Hitchcock of the Atlantic company, has been elected a director and treasurer of the Bellis Heat Treating Co., succeeding James W. Hook, resigned. The Bellis company is the patentee and owner of a salt bath process for annealing, hardening and tempering carbon and high speed steels and other metals. The company proposes to broaden its scope by entering the wire annealing field.

To Study Aliens

Secretary Davis Visits South America To Observe Selective Laws

Washington, Nov. 11.—Secretary of Labor Davis has gone to Buenos Aires to investigate immigration conditions in South America. After visiting Brazil, he will spend some time in Uruguay, Chile and Peru. Commenting upon the trip, and immigration policies, Secretary Davis said before departing:

"The last congress gave us a partly selective immigration law. It was the longest step forward in solving this problem which ever has been taken by the United States. I am told that several South American countries have had a selective policy in effect for a number of years. There people report than it is working well.

"I believe that immigration to the United States should be placed upon a purely selective basis. That is, we should permit to come to this country only such immigrants as are necessary to meet our industrial and economic needs. But any restrictions imposed should be made in such a way as to prevent the division of families and permit the reuniting of separated families whose bread winners are here, with wives and children on the other side; provided, of course, that those seeking admission as faimily dependents be physically, mentally and morally fit.

"In order that we may have the benefit of the experience of countries which claim to have solved the problem I intend to make a close study not only of the laws of our neighbors to the South, but the facilities they have for admission, distribution and control.

"These countries, too, have some interesting methods of handling the naturalization of aliens. I expect to devote my time for the next two months to a study of all the questions relating to aliens in South American countries and comparing them with our own."

Societies News

MANY subjects pertinent to the foundry industry will be discussed at the twenty-eighth annual convention of the National Founders' association at the Hotel Astor, New York, Nov. 19-20. A number of prominent speakers will present papers dealing with the problems confronting foundry executives. Briefly, the program is as follows:

Wednesday, Nov. 19

MORNING

Reports of officers
Reports of committees
Address: "Coming Shadows," by James A. Emory, counsel, National Founders' association

AFTERNOON

Paper: "Communism and Common Sense," by Jacob H. Rubin, Milwaukee
Paper: "Better Understanding Between Industry and Agriculture," by a representative of the national grange
Paper: "Industrial Relations in Industry," by J. M. Larkin, assistant to president, Bethlehem Steel Co., Bethlehem, Pa.
Paper: "My Economic Creed," by Col. Alfred O. Thom, general counsel, Association of Railway Executives

EVENING

Dinner at 7 p. m.
Address: "Adjusting Ourselves to the New Era in Business," Harry Collins Spillman, New York.

Thursday, Nov. 20

MORNING

Paper: "Foundry Cost Methods—Wise and Otherwise," by E. T. Runge, E. T. Runge Cost Co., Cleveland
Paper: "Apprenticeship in the Foundry," by L. A. Hartley, supervisor of trade and industrial education, State of Nebraska, Lincoln, Neb.
Election of officers

* * *

Ingot Cooling Discussed

At a meeting of the Pittsburgh chapter of the American Society for Steel Treating at the Fort Pitt hotel, Nov. 6, a paper was presented by C. I. Neidringhaus, chief metallurgist, Mesta Machine Co., Pittsburgh. The title of the paper was "The Influence of the Rate of Cooling on the Structure of the Steel Ingot." Lantern slides were used as illustrations.

* * *

Editor Addresses Foundrymen

Pat Dwyer, engineering editor of *The Foundry*, Cleveland, was the speaker at the first winter meeting of the Newark Foundrymen's association held recently at the Newark Athletic club, Newark, N. J. The speaker confined his remarks principally to features of the recent foundrymen's convention and exhibition in Milwaukee. J. L. Carter, president of the association, announced that plans were being made to co-operate with the Newark board of education in the establishment of a night course for foundry apprentices.

* * *

Preventing Metallic Corrosion

Clifford R. Texter, a specialist in anticorrosion engineering, delivered a public lecture on "Corrosion Preventatives," Nov. 10, in the Mellon Institute of Industrial Research, Pittsburgh. The discourse related the cause and prevention of metallic corrosion, with particular reference to the corrosion of iron and steel products and methods for retarding and preventing it. In research carried out at Mellon institute, Mr. Texter has discovered that the corrosion in hot water supply systems may be stopped by adding sodium silicate to the heater. The silicate is carried throughout the system and is precipitated out upon the internal walls of the iron or steel pipe in the form of a "self healing" protective film, which prevents rusting of the iron and steel.

Convention Calendar

Nov. 13-15—American Institute of Steel Construction. Annual convention, French Lick Springs hotel, French Lick, Ind. C. F. Abbott, 350 Madison avenue, New York, is executive director.

Nov. 19-20—National Founders association. Annual convention, Hotel Astor, New York. J. M. Taylor, 29 South LaSalle street, Chicago.

Dec. 1-4—American Society of Mechanical Engineers. Annual meeting at the Engineering Societies building, New York. Calvin W. Rice, 29 West Thirty-ninth street, New York, is secretary.

Obituaries

EDWARD H. UTLEY, vice president and manager of the Bessemer & Lake Erie railroad, subsidiary of the United States Steel Corp., died Nov. 8 at his home in Pittsburgh. He began his business career with the Pacific & Atlantic Telegraph Co. at Philadelphia in 1872, and served this company one year. When it was absorbed by the Western Union Telegraph Co., he severed his affiliations with the company and returned to Wisconsin, his boyhood home. He there entered the employ of the Chicago, Milwaukee & St. Paul railroad and was made superintendent of the Chicago division. Following a short period in the service of this company, he returned to the Pittsburgh district and was made operator and private secretary to the president of the Allegheny Valley railroad. While in the service of this company he occupied the positions of secretary, general freight agent and general freight and passenger agent until June, 1889, when he was made general freight agent for the Carnegie Steel Co. Mr. Utley was made vice president and general manager of the Bessemer & Lake Erie railroad in 1901 and acted as federal manager under the national administration of railroads during the war.

* * *

Paul H. Schell, Baltimore district sales agent of the Poldi Steel Corp. of America., New York, died at his home in Baltimore, Nov. 1, following an illness for about five days of pneumonia.

* * *

John Henry Barrows, treasurer of the Taunton New Bedford Copper Co., New Bradford, Mass., died at his home in that city after a long illness. He was 64 years old.

* * *

Herbert Ogden Hyatt, president and treasurer of the Brass Goods Mfg. Co., Brooklyn, N. Y., died recently at his country home, Amityville, L. I. He formerly was president of the Metals Packing Co., Brooklyn.

* * *

J. A. Probst, assistant superintendent of W. S. Tyler Co., Cleveland, manufacturer of wire products, died at the age of 57 years at his home there Nov. 6. He had been connected with the Tyler company 45 years.

* * *

Edward C. Burrell, general manager of Funch, Edye & Co., 25 Broadway, New York, shipping company, died at the Neurological institute, New York, Nov. 4, in his fifty-sixth year. During the world war he was assistant director of transportation for the British Ministry of Shipping.

* * *

John T. King, one of the founders of King & Walker, founders and machinists, Madison, Wis., now the Wisconsin Foundry & Machine Co., died on Nov. 3 from a stroke of paralysis. He was 74 years old and a native of Jefferson county, N. Y. He retired from active affairs two years ago because of failing health.

* * *

Robert Benson, identified with the National Tube Co., at its McKeesport, Middletown and Pennsylvania works, died Nov. 7 at the home of his daughter in Pittsburgh. Mr. Benson was born in Yorkshire, England, Sept. 22, 1848 and in 1873 he located in Pittsburgh. He became identified with National Tube Works Co., in 1878 and for 41 years or until 1919, he was actively connected with its various branches. While in Middletown, he was a member of the borough council and its president and burgess for several years.

Confidence Grows in Machinery

Hesitancy in Closing Sales Diminishing and Inquiries Are Mounting Rapidly in Some Districts—Seaboard Air Line Acts on Large List—Used Tool and Conveying Equipment Demand Also Shows Increase

GROWING confidence in prospective business betterment during the coming few months is reflected in activity in the machine tool market. Buyers who had delayed action for the past several months now are entering the market with feelers and many with definite inquiries. Railroads have reacted more quickly than industrials to the favorable election result and have closed on more tools during the past week than in most of October. The leading award of the week was that by the Seaboard Air Line, which is reported to have placed between $60,000 and $70,000 of equipment with one seller, the total volume awarded not being obtainable. Other sales of the week involving more than the customary single tool items, were 13 for the board of education at Bayonne, N. J., and five lathes for a Connecticut hardware manufacturer.

Used equipment demand has increased with a decided betterment noted in the Pittsburgh district. Price concessions on this class of equipment still are an incentive for the average buyer of machinery and sales volume is expected to start back to normal after several lean months.

Inquiry for conveying equipment in the New York district is the best in weeks. Despite lack of large awards, the aggregate going to builders' books is more encouraging than in the same period of October.

Railroads Re-act Quicker Than Industrials

NEW YORK, Nov. 11.—Outstanding in the eastern machine tool market is buying by the Seaboard Air Line. While it is yet impossible to definitely check the extent of this business, it is known that fully $60,000 to $70,000 of equipment has been placed with one seller. Among the items were a heavy duty lathe, a coach wheel lathe, two centering machines and a milling machine.

While sufficient time has not elapsed to reflect accurately the effect of elections on business, inquiry has undoubtedly improved, with orders in slightly better volume. Sellers generally, while expecting no heavy rush of business, look for a betterment over the next few weeks.

Other buying the past week includes 13 machine tools for the board of education, Bayonne, N. J. Orders were fairly widely distributed, and in the case of the six engine lathes, it is understood that these went to as many different manufacturers. The Kansas City Southern noted in a recent issue as placing a combination journal turning and axle lathe has also awarded a coach wheel lathe to a seller with headquarters in this city is contemplating additional purchases shortly. The Norfolk & Western has closed on an axle lathe; the Brady Brass Co., Jersey City, two or three items including a car box borer, and the Day-Evans Iron Works, in the Birmingham, Ala., district, on a 42-inch car wheel borer.

Other orders to be placed with the eastern sellers include a 250-pound steam hammer for the International Supply Co., St. Louis; a 44-inch boring and turning mill for the American Steel & Wire Co., Chicago; and a contract for the rebuilding of a car wheel lathe for the Interborough Rapid Transit Co. The Virginian railway is in the market for five machines for its Narrows power plant. This list includes a lathe, a shaper, a 26-inch drill, and two pipe machines.

Inquiry for conveying equipment is the best in many weeks. Buying has shown no particular improvement, but several sizable jobs are expected to be closed within the next few days, and unquestionably the whole tone of the market is best in a long while. An upward tendency in prices appears likely, and one seller of overhead cranes is expecting to withdraw all outstanding quotations within the next two weeks. One feature of current demand for overhead cranes is the reappearance of several inquiries which have been held up for months.

Improvement Lags at Cleveland

CLEVELAND, Nov. 11.—Improvement in the machine tool market lags at Cleveland, with an absence of the marked betterment since election which has characterized other centers. Of chief importance from the standpoint of dealers is the closing of bids Nov. 10 by the board of education on 68 tools for the new junior high school in Collinwood. Miscellaneous sales of small tools continue, one of the largest such being that for 160 buffers for a manufacturer in the southern part of Ohio. Inquiries are in better volume according to several dealers, but sales sheets show little increase over the total of October. Used tools are moving slightly better, with one dealer having closed out several large items last week.

Crane activity has slackened somewhat after several weeks of large bookings. The largest award of conveying equipment was that for 20 1000-pound hoists for the American Shipbuilding Co., the business going to the Cleveland Crane & Engineering Co.

Some orders which were awarded contingent upon the outcome of the election are expected to be released this week. One of the largest such releases during the past week was that awarded by the Birmingham Sand & Gravel Co., Detroit for a complete material handling installation, involving a 50-ton crane, belt conveyor, etc., to McMyler-Interstate Co.

An inquiry coming to this market during the past week from Pennsylvania was that of the Ricks Machine & Foundry Co., Uniontown, Pa., for a 60-inch boring mill and a bulldozer for handling material 3½ inches wide by 36 inches long by ½ inch thick.

Increased Confidence Reflected

CINCINNATI, Nov. 11.—Increased confidence in the machine tool market was reflected last week in better sales. Inquiries have shown a good gain and activity during the next several weeks is expected to be above the level of September and October. The trade attributes the increased activity to the election of President Coolidge. With the election out of the way, it is expected that the railroads will be closing on lists which have been pending. Machine

tool builders look for further improvement in business for the remainder of this year. The G. A. Gray Co. received an order from the Carnegie Steel Co. for a 36-inch planer.

Used equipment buying is in better volume. One dealer sold a bolt cutter, lathe, miller, shaper, press and smaller tools last week, which was more business taken than in the past three weeks. Sentiment is much better.

Inquiry Continues To Improve

BOSTON, Nov. 11.—While machine tool sales during the past week have not held up to the encouraging level established in the week previous, inquiry continues to improve and much buying of equipment seems in prospect before the end of the month. Improved conditions in the textile industry are opening up operations in several idle or partially idle properties, and part of the current tool inquiry comes from this source. Textile machine manufacturers also are coming into the market. One such company bought three tools during the past week. A Connecticut hardware manufacturer bought five lathes for a plant extension. Other scattered sales of individual tools brought the total for the week at Boston to 18 or 20.

Used tool dealers report slight improvement in sales although prices are still exceedingly low. New tool prices are firm.

Equipment Activity Spreading

PITTSBURGH, Nov. 11.—Equipment sellers report that confidence among buyers appears to be spreading, although this has not taken the form of large expenditures for either machine tools or cranes. Some dealers here go so far as to state that in all probability, no important buying movement will materialize until spring. In the meantime single machine tool sales are received each week by a number of sellers.

The used machinery market also is active. The Aetna Foundry & Machine Co., Warren, O., has been a heavy purchaser of this type of equipment of late on its recent list. More items remain to be closed. The National Tube Co., is to buy equipment for Gary, Ind. The Carnegie Steel Co., has added several more items to its list for Edgar Thomson works referred to in IRON TRADE REVIEW last week and in addition to the machines then mentioned, now wants a motor driven drill press, a 5-foot radial drill, a slotter and several smaller items. Central Tube Co., Economy, Pa., has not started to buy on its list referred to two or three weeks ago and several other smaller lists together with numerous single-tool inquiries are pending. Several of the larger buyers have issued preliminary inquiries in an effort to find out possible cost of projects in mind. Small tools are selling readily, such as motor driven drill presses, grinders, etc.

Inquiries for foundry equipment are numerous, several of these coming out immediately subsequent to the election. The Herman Pneumatic Machine Co., Zelienople, Pa., reporting the receipt of several by wire. It has received several attractive orders of late including three machines for the American Manganese Steel Co.'s new plant at Los Angeles, three for the T. H. Symington Co., Rochester, N. Y., two each for the American Radiator Co., Kansas City, Mo., and the Richardson & Boynton Co., Dover, N. J., and one each for the Pittsburgh Plate Glass Co., Creighton, Pa., and the Birdsboro Steel Foundry & Machine Co., Birdsboro, Pa. The glass company also purchased an electric sand sifter and 10 or 12 foundries are interested in sand mixers and other miscellaneous equipment including core ovens, tumbling barrels, sprayers for spraying blacking on molds, cores, etc. A local manufacturer will close on a large number of tumbling barrels before long and a foundry in Omaha, Neb., is inquiring here for complete foundry equipment.

The crane market is quiet, save for a number of single crane installations, placed and pending, together with an occasional inquiry for a larger number. Recent purchasers include the Champion Spark Plug Co., Toledo, O., and the Kelly Axe & Tool Co., Charleston, W. Va. Prospective buyers include the National Tube Co., an ore bridge for Lorain, O., and one for McKeesport, Pa.; Carnegie Steel Co., various types of heavy equipment for nearby plants; Jones & Laughlin Steel Corp., cranes for terminal at Memphis, Tenn., and one or two others, quickened by the election.

Moderate Buying Election Sequel

CHICAGO, Nov. 11.—Most machine tool houses in Chicago have done a comfortable business in machinery but have experienced no decided gains as the result of the favorable election. The opinion is that business over the remainder of the year will be fair, with improved buying in prospect after the turn of the year. Railroad budgest for 1925 will shortly be formulated and better buying from from this source is relied upon. The fact that the Illinois Central railroad is buying nearly 7000 tons of structural steel for shop additions is regarded as the forerunner of equipment buying.

C. R. Huston, 432 North Oakley

Crane Awards and Inquiries of the Week

Orders Placed

20 block stripping cranes, with 400-foot of runway, for the American Steel & Wire Co., Worcester, Mass., to the tramrail division of the Cleveland Crane & Engineering Co.

Three cranes for Thompson & Binger, consulting engineers, 103 Park avenue, New York, to Richard Wilcox Co.; specifications call for one 1-ton wall-type crane and two 2½-ton underhung cranes of short span.

Three gasolene crawler cranes for Patrick McGovern, Inc., 50 East Forty-second street, New York, to Northwest Engineering Co.

Single Installations

125-ton, 4-motor crane, 114-foot span, for the Philadelphia Electric Co., Philadelphia, to an eastern builder.

100-ton, 4-motor crane, 42-foot span, for the Mill Power & Supply Co., Birmingham, Ala., to an eastern seller.

50-ton electric crane, 10-ton auxiliary, 42-foot span, for the J. G. White Engineering Co., 42 Exchange Place, awarded an unnamed seller.

45-ton, 2-motor crane, 31-foot span, for the Northern Utilities Co., Watertown, N. Y., to the Northern Engineering Co.

20-ton gantry crane for the Public Service Corp., Newark, N. J., placed the order reported going to the Cleveland Crane & Engineering Co.

15-ton electric crane, 40-foot span, for the American Smelting & Refining Co. for export to Mexico, to the Whiting Corp.

10-ton electric crane for the Ludlow Valve Co., Troy, N. Y., to the Morgan Engineering Co.

6-ton, single I-beam crane, 25-foot span for the Atlanta Ice & Coal Co., Atlanta, Ga., to the Chisholm-Moore Mfg. Co.

5-ton, 3-motor special crane with 60-foot span for the Champion Spark Plug Co., Toledo, O., to the Milwaukee Electric Crane & Mfg. Co.

5-ton, 3-motor electric traveling crane with 44-foot span for the Kelly Axe & Tool Co., Charleston, W. Va., to the Milwaukee Electric Crane & Mfg. Co.

5-ton crane awarded to Colby Steel & Engineering Co., Seattle, by St. Paul & Tacoma Lumber Co., Tacoma, Wash.

2½-ton handpower crane for the West Virginia Pulp & Paper Co., 200 Fifth avenue, New York, to Maris Bros.

Electric walking jib crane for the Erie railroad for installation at Susquehanna, Pa., to the Whiting Corp.

Orders Pending

100-ton electric overhead crane for the Phoenix Utility Co., 71 Broadway, New York; bids asked.

10-ton electric traveling crane, Benesch Bros., Port Washington avenue, Milwaukee; pending. I. Benesch, purchasing agent.

5 to 10-ton crane for F. Wabiszewski, Kilbourn road, Milwaukee; pending.

Ore bridges for the National Tube Co., Lorain, O., and McKeesport, Pa. The Lorain bridge probably will be placed within a week.

Traveling crane, for Walker Mfg. Co., Hamilton and Michigan streets, Racine, Wis.; pending.

Traveling cranes, for Morgan Construction Co., 14 Belmont street, Worcester, Mass.; pending.

Cranes for the Jones & Laughlin Steel Corp., terminal at Memphis, Tenn.; bids being considered.

street, Kansas City, Mo., has issued a list of equipment desired for the manufacture of horizontal and vertical oil storage tanks, No. 10 gage and lighter, welded construction. The list includes a set of rolls for forming sheets, a combined circular cutting and flanging machine, a hand and power shear each with a minimum capacity of 72-inches, an alligator shearing machine, a small power drill press, a power hacksaw cutting pipe 4-inches and smaller, a small foot power punch press, ½ to ¾-ton chain hoist, welding frames and other machinery for fabricating a diversified line of sheet metal products including blow torches, solder equipment, hand brake and serpentine shear. The Federal Can Co., Nashville, Tenn., is inquiring for equipment necessary for the manufacture of 8-inch refillable screw-cap drums. The Chicago board of education will take bids, Nov. 13, on a 10-inch sensitive drill press and several smaller items. The Chicago, Burlington & Quincy railroad is inquiring for a small radial drill for one of its coal-mining subsidiaries.

A machinery house has placed six foot presses with one manufacturing interest and six lathes with another. Other recent sales include a 16-inch x 6-foot lathe, a double disk grinder and two threading machines.

The Kansas City Bolt & Nut Co., Kansas City, Mo., is understood to be closing on a fair-size list of equipment for its new addition.

Recent Industrial Business Changes

ED. GIBERSON & CO., INC., 40 Rector street, New York, have opened an office in the Royal Bank of Canada building, Havana, Cuba, in charge of D. L. Monjo who previously had been engineer for the Giberson company, with headquarters in New York. The new Havana office will handle iron and steel products in the Cuban market, specializing in boiler tubes and other tubing and various other American made steel products. The company also is agent for the Thyssen interests of Germany and will sell heavy steel products such as bars, structural shapes and plates for the Thyssen mills in Cuba.

* * *

William Graver Tank Works, East Chicago, Ind., has changed its name to the Graver Corp.

* * *

Air Reduction Co., New York, is establishing a branch plant on Federal between Eighth and Liberty streets, Lebanon, Pa.

* * *

Diversey Foundry Co., Chicago, has changed its location from 1651 Wolfram street, to the corner of Richards and Peyton streets, Geneva, Ill.

* * *

Crane-Schiefer-Owens, Inc., 501 Morgan building, Buffalo, N. Y., has appointed Maurice Owens as associate with Joseph F. Owens in charge of the office at Syracuse, N. Y.

* * *

Whiting Corp., Harvey, Ill., builder of cranes and foundry equipment, has opened a district sales office at 997 Ellicott Square building, Buffalo, to succeed its former agent, George F. Crivel & Co., that city. The new office will be in charge of W. R. Hans.

* * *

The Reeve-Fritts Co., Machine tool dealers, now at 37 South Desplaines street, Chicago, will move to larger quarters at 558 West Washington boulevard in December.

* * *

The Central Steel & Wire Co., 127 North Peoria avenue, Chicago, is moving to a modern warehouse it has erected at 4545 South Western avenue.

* * *

Jarecki Mfg. Co., Erie, Pa., will move in the spring to the plants recently purchased from the government at auction and formerly known as the American Brake Shoe & Foundry Co.'s plant.

* * *

Paterson-Leitch Co., iron and steel warehouse and reinforcing bar interest, will move its headquarters about Feb. 1 from 936 East Sixty-seventh street to the old King Bridge Co. site at Fifty-ninth street and St. Clair avenue, Cleveland.

* * *

The branch of the H. H. Miller Industries Co., formerly at 415 Ninth street, Canton, O., has been consolidated with the main plant in the new buildings at Lawrence road, that city, where M. E. Miller will be in charge.

* * *

Foote Bros. Gear & Machine Co., 215 North Curtis street, Chicago, has appointed Darling Bros., 120 Prince street, Montreal, as sales agent for their gear products throughout Canada. Besides the Montreal office, Darling Bros. has sales offices at Windsor, Toronto, Winnipeg, Halifax, Ottawa, Vancouver and Quebec.

* * *

Pittsburgh Steel Co., Pittsburgh, has sold to the Monessen Coal & Coke Co., its Alicia No. 1 mine situated about a mile south of Brownsville, Pa. With the purchase of the mine go the miner's houses, tipples, power house, machine shop, coke ovens, steamboats, barges, etc.

* * *

The Gibb Instrument Co, Bay City, Mich., manufacturer of electric welding and heating equipment, announces the appointment of H. V. Beronius as its representative in Iowa, Kansas, Nebraska, Oklahoma, and Northwestern Missouri. His headquarters will be at 33 Linwood Terrace, Kansas City, Mo.

* * *

Baker Goldstein Co., Inc., which for the past 12 years has occupied its properties at 15 Catherine Slip, New York, is moving to 1664 Fowler avenue, Bronx. The company has purchased a large building at the new address and will amplify greatly its movements in the iron and steel warehouse field.

* * *

Combustion Engineering Corp., has removed its Detroit office from the Penobscot building to 1142 Book building, 1227 Washington boulevard. James Cleary, formerly manager of the Philadelphia office, will assume management of the Detroit and Cleveland territories with offices in Detroit. Joseph Lappin, formerly in charge of the Detroit office has been assigned to New York for special work.

Warehouse Steel Prices

Quotations at Cents Per Pound at Leading Market Centers

STEEL BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.10c
Detroit	3.15c
Los Angeles	3.00c
New York	3.24c
Philadelphia	3.10c
Pittsburgh	2.90c
San Francisco	2.85c
Seattle	3.25c
St. Louis	3.15c
St. Paul	3.25c

IRON BARS

Boston	3.265c
Buffalo	3.35c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.15c
New York	3.24c
Philadelphia	3.10c
St. Louis	3.15c

REINFORCING BARS

Boston	3.25c to 3.50c
Buffalo	3.40c
Chicago	2.25c to 2.50c
Cincinnati	3.30c
Cleveland	3.10c
Detroit	3.15c
Los Angeles, C. L.	3.60c
Los Angeles, L. C. L.	4.00c
New York	2.80c
Philadelphia	2.80c
Pittsburgh	2.15c to 2.20c
San Francisco, C. L.	3.35c
San Francisco, L. C. L.	3.80c
Seattle	3.50c

STANDARD STRUCTURAL SHAPES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.20c
Detroit	3.25c
Los Angeles	3.00c
New York	3.34c
Philadelphia	2.95c to 3.10c
Pittsburgh	3.00c
San Francisco	3.00c
Seattle	3.35c
St. Louis	3.25c
St. Laul	3.35c

PLATES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-inch and thicker	3.20c
Cleveland, 3/16-inch	3.425c
Detroit	3.20c
Detroit, 3/16-inch	3.45c
Los Angeles	3.00c
New York	3.34c
Philadelphia	2.95c to 3.10c
Philadelphia, 3/16-inch	3.06c to 3.26c
Pittsburgh	3.00c
San Francisco	3.00c
Seattle	3.25c
St. Louis	3.25c
St. Paul	3.35c

NO. 10 BLUE ANNEALED SHEETS

Boston, 3/16-inch	3.915c
Buffalo	4.05c
Chicago	3.80c
Cincinnati	3.90c
Cleveland	3.45c to 3.76c
Detroit	3.95c
Los Angeles	4.05c
New York	3.89c
Philadelphia	3.75c
San Francisco	3.95c
Seattle	4.50c
St. Louis	3.90c
St. Paul	4.05c

NO. 28 BLACK SHEETS

Boston	5.00c
Buffalo	4.75c
Chicago	4.50c
Cincinnati	4.55c
Cleveland	4.35c to 4.55c
Detroit	4.65c
Los Angeles	5.15c
New York	4.60c
Philadelphia	4.75c
San Francisco	5.00c
Seattle	5.50c
St. Louis	4.65c
St. Paul	4.85c

NO. 28 GALVANIZED SHEETS

Boston	6.00c
Buffalo	5.85c
Chicago	5.50c
Cincinnati	5.65c
Cleveland	5.45c to 5.65c
Detroit	5.75c
Los Angeles	6.00c
New York	5.60c
Philadelphia	5.85c
San Francisco	5.90c
Seattle	6.50c
St. Louis	5.65c
St. Paul	5.65c to 5.90c

BANDS

Boston	4.015c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.85c
Detroit	3.80c
Los Angeles	4.00c
New York	3.99c
Philadelphia	3.85c
Pittsburgh	3.60c
San Francisco	3.60c
Seattle	4.25c
St. Paul	3.90c

HOOPS

Boston	5.50c
Buffalo	4.40c
Chicago	4.15c
Cleveland, 1-inch and wider No. 20 and heavier	3.85c
Cleveland, narrower than 1-inch	4.35c
Detroit	4.30c
New York	4.49c
Philadelphia, ¼-inch and wider, 20 gage and heavier	3.85c
Philadelphia—narrower than ¼-inch	4.35c
Pittsburgh	3.60c
Seattle	5.00c
St. Paul	4.70c

COLD FINISHED STEEL

Boston (shapes)	4.55c
Boston (rounds)	4.05c
Buffalo (rounds)	4.20c
Buffalo (shapes)	4.70c
Chicago (shapes)	4.30c
Chicago (rounds)	3.80c
Cincinnati (rounds)	4.05c
Cincinnati (shapes)	4.55c
Cleveland (rounds)	3.90c
Cleveland (shapes)	4.40c
Detroit (rounds)	4.10c
Detroit (shapes)	4.60c
Los Angeles (rounds)	4.75c
New York (rounds)	4.05c
New York (shapes)	4.55c
Philadelphia (rounds)	4.05c
Philadelphia (shapes)	4.55c
Pittsburgh (rounds)	3.80c
Pittsburgh (sq. hex. and flats)	4.30c
San Francisco (rounds)	5.25c
Seattle (rounds)	4.75c
St. Paul (rounds)	4.05c

WELDED PIPE

Discounts from warehouse, New York City

Standard Steel Pipe (Subject to Shading)

	Black	Galvanized
⅛-⅜-inch butt	—31	+ 2
½-inch butt	—41	—24
¾-inch butt	—46	—32
1/3-inch butt	—48	—34
3½-inch lap	—44	—30
7-8-inch lap	—41	—11
9-10-inch lap	—35	— 8
11-12-inch lap	—34	— 6

Wrought Iron Pipe

	Black	Galvanized
⅛-⅜-inch butt	+44	+78
½-inch butt	— 4	+19
¾-inch butt	—11	+ 9
1-1½-inch butt	—14	+ 6
2-inch lap	— 5	+14
3-6-inch lap	—11	+ 6
7-12-inch lap	— 3	+16

Iron and Manganese Ores and Minerals

Iron Ore

LAKE SUPERIOR ORES

Per Gross Ton Lower Lake Ports

Old range bessemer, 55 per cent iron	$5.65
Mesabi bessemer, 55 per cent iron	5.40
Old Range nonbessemer, 51½ per cent iron	4.90
Mesabi nonbessemer, 51½ per cent iron	4.75

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 53 to 63 per cent	9.00 to 10.00
Copper free low phosphorus 53 to 65 per cent	nominal

FOREIGN IRON ORE

Cents per unit, c.i.f. Atlantic ports

Spanish low phosphorus, 52 to 54 per cent	9.50 to 10.00
Algerian low phosphorus, 52 to 54 per cent	10.50 to 11.00
Swedish and Norwegian low phosphorus, 68 per cent.	11.00 to 11.50
Swedish foundry or basic, 66 to 68 per cent	9.00 to 10.00
Spanish foundry or basic, 50 to 54 per cent	8.00 to 9.00
Algerian foundry and basic, 50 to 54 per cent	8.00 to 9.00

Manganese Ore

Prices do not include duty at rate 1 per cent per pound of metallic manganese contained.

Brazilian, minimum 47 per cent....nominal
Indian, minimum 47 per cent....nominal
Caucasian, 53 to 55 per cent....
.....Ordinary, nominal c.i.f. tidewater
.....Washed, 39 cents c.i.f. tidewater

Fluor Spar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$17.50 to 21.50
Washed gravel, imported duty paid eastern tidewater, per net ton	17.00 to 18.00

Bourne-Fuller Service

includes immediate shipment of all Iron and Steel materials from Cleveland and Cincinnati

Warehouses

If you are not receiving our Stock-list we shall be glad to send it to you regularly upon request.

Upson Works

Open Hearth Steel Bars for Special uses. Also a complete line of Bolts and Nuts. Prompt Shipments.

THE
BOURNE-FULLER CO.
Iron, Steel
Pig Iron
Coke
CLEVELAND

New York **Chicago**
San Francisco
Cincinnati **Detroit**

Construction and Enterprise

Concise and Timely Business Building Opportunities from the Field of Industry

Where additional information is presented, reference is made to date of issue in which previous item appeared.

BIRMINGHAM, ALA.—Drennan Motor Car Co., 400 South Twentieth street, has plans for constructing $40,000, 2-story, addition to its garage and repair shop. H. A. Drennan is president.

BIRMINGHAM, ALA.—Alabama Stove Works, Inc., has been incorporated for $50,000 to manufacture and deal in stoves, etc., with D. O. Dortsch, Columbia, Tenn., as president, and A. T. Stanley, Bridgeport, Ala., as secretary.

TALLADEGA, ALA.—Talladega Foundry & Machine Co. has been incorporated with $250,000 capital, to own and operate foundries and machine shops, with Mrs. M. P. Clark as president and E. W. McDonald, as secretary.

BERKELEY, CAL.—Standard Die & Specialty Co. has awarded the Austin Co., of California contract for constructing building here.

LOS ANGELES—Baker Iron Works has been awarded contracts by J. Musto Sons Kennan Co. for constructing addition to machine shops at 807 South Soto street.

OAKLAND, CAL.—Hubbard & Co., Pittsburgh, manufacturers of pole line equipment and miscellaneous metal products, have awarded the Austin Co. of California, engineer and builder, contract for constructing branch plant here.

BRIDGEPORT, CONN.—State Metals Corp. has been organized by Edward Goldenberg, Gertrude S. Goldenberg and Robert Gordon.

NEW LONDON, CONN.—Universal Signal Co., Inc., has been organized by Bertram F. Bruce, Charles H. Kenney and P. L. Shea, to manufacture and deal in signal devices, etc.

MIAMI, FLA.—Freeman & Sons, Inc., 3638 Northeast Second avenue, have let contracts to A. Middlemass, 236 Northeast Thirty-sixth street, for constructing 3-story, 100 x 108-foot steel and concrete garage and repair shop. A lathe, drill, air compressor and other equipment will be installed.

CHICAGO—Joseph E. Smyth Co., 638 Federal street, has purchased a site for a 2-story plant.

CHICAGO—Charles C. Larson Co. has retained Mandie & Jensen, 39 South La Salle street, for planning 1-story, 128x140-foot forge shop. Bids are in for the construction.

CHICAGO—E. W. Sproul Co., 201 West Pershing road, is taking bids for constructing 1-story, 100x171-foot plant for the Illinois Shipping Container Co., 1302 West Division street.

CHICAGO—Honspud Machinery Co., Palmer & Crawford avenues, plans 1-story, 50 x 100-foot side addition to its plant. Nichaelson & Rognstad, 3815 Congress street, are architects.

CHICAGO—R. S. Broge has retained R. G. Wolff, 400 North Michigan avenue, as architect for constructing a 1-story, 100x190-foot garage at Mather street near Halsted.

CHICAGO—Continental Radio Corp., 2416 South Michigan avenue, has been incorporated for $50,000 to manufacture and deal in radios and equipment, by T. C. Frederics, Harry A. Biossat and J. P. O'Brien.

CHICAGO—Hawkins Beyer & Paul Service Corp., 34 South Wabash avenue, has been organized with $15,000 capital, to deal in and repair automobiles and motor vehicles, by Charles A. Beyer, Fred P. Hawkins and Paul Klanduch.

CHICAGO—Marking Device Co., 4529 Ravenswood avenue, has been incorporated for $7500 to manufacture and deal in badges, signs and metal novelties, by M. L. Hedman, John P. Holland and Hirsch H. Resnick.

CHICAGO—International Harvester Co. has awarded the Austin Co., engineer and builder, contract for constructing 1-story, 80x500-foot building at Fort Wayne, Ind., to be used as storage warehouse.

CHICAGO—S. Brandringa, 7153 South Halsted street, has awarded contracts to J. B. McCabe, 7135 Peoria street, for a 1-story, 50x135-foot garage and service station. John Hocke, 7602 Chappel street, is architect.

CHICAGO—Victor Adding Machine Co., 319 North Albany avenue, has retained S. Milton Eichberg, 64 West Randolph street, to prepare plans for a 3-story plant costing approximately $250,000.

CHICAGO—A. E. Epstein, has awarded contracts to E. C. Ackerman, 2724 Giddings street, for 1-story, 100 x 188-foot garage and service station, for which M. O. Nathan, 123 West Madison street, is architect.

CHICAGO, ILL.—Hercules Electric Co., 3921 Benssen avenue, has been incorporated for $7500 to manufacture and deal in electrical equipment of all kinds, by Irwin H. Keller, Frank H. Lotridge and Cornelius Keller.

CHICAGO—Allmetals Foundries, Inc., 116 South Clinton street, has been incorporated for $25,000 to manufacture and deal in metals and their by-products. James J. Magner, L. B. Anderson and Kathryn Hartnett, are incorporators.

CHICAGO—Osco Tool & Machine Co., 910 West Jackson boulevard, has been formed with $25,000 capital, to manufacture and deal in electrical appliances, machinery and parts, by Ragnhild Nielsen, Holger Thielgaard and E. F. Laurin.

CHICAGO—Frank Newman, 4129 Bernard has awarded contracts to M. Alter & Son, 1414 North Washtenaw street, for 1-story, 143 x 149-foot garage and service shop at 5437 West Harrison street. M. L. Bein, 64 West Randolph street, is architect.

CHICAGO—The Haynes & Kinder Co., manufacturer of advertising signs, has awarded the Austin Co., engineer and builder, contract for constructing 1-story, 120x125-foot steel frame, saw-tooth type building to house offices and plant.

COBDEN, ILL.—Dubois Fluorspar Mining Co. has been incorporated for $250,000 to operate and develop mining properties, by Lindorf Walker, Harvey A. Dubois and William J. Rodgers.

DECATUR, ILL.—Standard Oil Co. plans constructing a 2-story, 50 x 150-foot machine shop here of brick and concrete at 400 East Cerro Gordo. Action is contemplated for next year.

MT. VERNON, ILL.—Mt. Vernon Car Mfg. Co. has retained Neiler Rich & Co., 431 South Dearborn street, Chicago, as architects and engineers for constructing 1-story, 240x350-foot foundry. W. C. Arthurs is president of the Mt. Vernon company. *Noted Nov. 6.*

PEKIN, ILL.—Mummer Sattelly Farm Implement Co. plant was damaged by fire here recently with heavy loss.

PEORIA, ILL.—Triangle Motion Sign Co., 311 Main street, has been incorporated for $300,000 to manufacture and deal in signs and advertising by Fred Mayer, Samuel N. Robinson and J. Paul Schnellbacher.

LOUISVILLE, KY.—Kentucky Hydro-Electric Co., 825 M. E. Taylor buidling, has applied for permission to construct a power plant at each of existing navigation dams from Lock No. 8 to 14, developing 30,000 horsepower.

LAKE CHARLES, LA.—The Lake Charles Electric Co. is extending its light and power facilities to the recently opened new oil field and a transmission system with a 13,000 unit capacity is being installed together with several new transforming stations and additions to the main plant. D. S. Manus is general superintendent.

NEW ORLEANS—Enterprise Sheet Metal Works, Inc., has been incorporated with $5000 capitalization.

SHREVEPORT, LA.—Peerless Welding & Machine Co. has added a welding section to its machine shop and is in need of different types of welding equipment, acetylene supplies, etc. R. L. Efurd is president of the company.

BALTIMORE—Bids will be received shortly by the Parker Metal Decorating Co., on the erection of a $60,000, 1-story factory building, 42 x 125. C. N. & Nelson Friz, Lexington building, are architects in charge.

FREDERICK, MD.—Hunter Heating Co. will make extensive improvements to its plant, including foundry room, cupolas, machine shops and pattern department, installing complete equipment. Markwood D. Harp is president.

BOSTON—Moto-Ray Mfg. Co., Inc., has been formed with 1000 shares no par value stock to manufacture tools and machinery, by Russell T. Fry and Jay G. McKenna, Brookline, Mass., and Edward T. Roche, Dorchester, Mass.

BOSTON—The Cutler-Ross Co. has been incorporated for $10,000 to do a general business of furnishing steel, iron and bronze work for buildings, with Alfred J. Ross as president and Eli Cutler as treasurer.

BOSTON—Lewis-Shepard Co., manufacturer of automobile handling machinery, has purchased from the Boston & Maine Railroad Co., 102,912 square feet of land at Watertown, Mass., where it plans constructing 1-story, brick and steel manufacturing plant.

CAMBRIDGE, MASS.—Industrial Steels, Inc., has been formed with $90,000 capital by John M. Curley and Harry F. Curley of Jamaica Plain, Mass., and George L. Bishop, Quincy, Mass.

CAMBRIDGE, MASS.—D. A. Harrison Co., Inc., has been incorporated for $90,000 to manufacture and deal in automobile accessories, by

David A. Harrison, Brookline, Mass., and Simon Morse and Milton I. Morse, Brighton, Mass.

FALL RIVER, MASS.—Waycross Co. has been incorporated for $500,000 to manufacture and deal in all kinds of automobile accessories, by Davis Fishman, Joseph F. Delahanty and Joseph Edward Lajoie.

LYNN, MASS.—Lynn Motor Co. has been incorporated for $50,000 to manufacture and deal in motors and electrical equipment, by Alfred H. Sowers and Helen C. Sowers, Marblehead, Mass., and Louis I. Schreiner, Swampscott, Mass.

NORFOLK DOWNS, MASS.—P. I. Bliss, 7 Freeman street, Wollaston, Mass., plans constructing 1-story, 25 x 40-foot auto sales room and repair shop.

SOUTH BOSTON, MASS.—Simonds Saw & Steel Co., Farmsworth street, has plans for 1-story addition to its plant.

WORCESTER, MASS.—Morgan Construction Co., manufacturer of rolling mill equipment, has let contracts to E. J. Cross Co. for a plant addition on Crescent street. *Noted Oct.* 30.

WORCESTER, MASS.—Queensbury Mills have been incorporated with $400,000 capital and 5000 shares no par value stock to manufacture textiles, machinery and chemicals, by Francis H. Dewey, Fred Hodgson and Francis H. Dewey, Jr., Worcester; Samuel W. Bridges, Newton, Mass., and Edmund Lissberger, New York.

DETROIT—Berg Garage Co., has retained Smith, Hinchman & Grylis, 800 Marquette building, as architects, for a 38x150-foot brick and reinforced concrete garage building to house 600 cars. C. C. Berg, 221 South Congress street, is president of the Berg company.

PLYMOUTH, MICH.—General Machine & Iron Works plans constructing 1-story, 25 x 50-foot machine shop on Penman avenue.

KANSAS CITY, MO.—Kansas City Steel & Wire Co. has plans for constructing 1-story, 80 x 250-foot structural steel and galvanized iron plant at Tenth street and the Kansas City Terminal tracks. L. W. Conroy & Forest Maloney, 628 Rialto building, are in charge of the proposed construction. *Noted Nov.* 6.

KANSAS CITY, MO.—Arrowhead Iron Works has purchased a brick building 80x115 feet at 421-31 West Fifth street for its new home which will be completely remodeled and equipped with modern machinery for manufacture of steel floor gratings, luggage carriers, motor car fenders, braces, etc. and fire escapes. W. L. Pattison is president of the company.

ST. LOUIS—Federal Metals Corp. has been incorporated with $988,000 capital, with Benjamin Lissberger as president and Lionel D. Waixel as assistant secretary.

ST. LOUIS—King Bee Auto Accessories Mfg. Co. has been incorporated for $30,000 to manufacture and deal in automobile parts and accessories, by M. S. Magruder, F. A. Hoel, 5342 Terry street, and A. Alberico.

BURLINGTON, N. J.—Bids were closed Oct. 28 on a plant addition for the United States Cast Iron Pipe & Foundry Co. This structure will be used for the manufacture of centrifugal pipe.

NEWARK, N. J.—A. A. Wire Co., 119 Sussex avenue, has been incorporated for $800,000 to manufacture wire products.

PASSAIC, N. J.—Conveyor Sales Co., 179 Passaic street, has been incorporated to finance the sales of machinery and equipment with $100,000 capital.

BROOKLYN, N. Y.—The N. P. Nelson Iron Works, 212 Fortieth street, Brooklyn, has acquired five acres near Passaic, N. J., for the erection of a new plant employing 100 men.

BROOKLYN, N. Y.—J. Sholnick, Green avenue, near Marcy avenue, is taking bids for constructing a 1-story, 75 x 100-foot brick garage and service station. T. Goldstone, 29 Graham avenue, is architect.

BROOKLYN, N. Y.—Monteith Iron Works has been incorporated for $5000 to manufacture and deal in iron and steel, by A. Israel, E. Schlesinger and M. H. Libowitz, with S. Friedland, 291 Broadway, as attorney.

BROOKLYN, N. Y.—Ansonia Park Garage has been incorporated for $50,000 to own and operate a garage and automobile repair shop, by A. Kreger, A. and H. Seidenberg, with T. Horwitz, 772 Broadway, as attorney.

BROOKLYN, N. Y.—Union Motor Products Corp. has been incorporated for $25,000 to manufacture and deal in engines, by R. M. Lease, B. Sulzer, and S. Arbetter, with J. S. Bernstein, 250 West Fifty-seventh street, as attorney.

BROOKLYN, N. Y.—Baum & Straus Building Corp., 105 Court street, has retained Magnuson & Kleinert, 52 Vanderbilt avenue, New York, as architect for 1-story, 75x124-foot garage and repair shop.

BROOKLYN, N. Y.—American Iron Nipple Mfg. Corp., has been incorporated for $10,000 to manufacture and deal in plumbers' supplies, by A. W. Klachko, R. L. Weissman and E. Klein, with Klein & Weissman, 44 Court street, as attorneys.

BROOKLYN, N. Y.—General contract for the erection of a $100,000 plant has been awarded by Saltster & Weinsier, 175 Cook street, manufacturers of sanitary ware, to the Walzer Corp., 44 Court street. According to plans by Tobias Goldstone, 50 Graham avenue, the proposed structure will be four stories high, 90 x 170 feet.

NEW YORK—Rathgeb Grate Co. has been incorporated for $125,000 to manufacture and deal in grates, by J. Rathgeb, F. J. Farnham and A. A. Druel, with A. J. Carleton, 151 West Forty-second street, as attorney.

BUFFALO, N. Y.—Cumming Body Co. has been incorporated for $5000 to manufacture hoists for automobiles, by C. M. McOwen, M. L. Berry and A. L. Hetzeit, with C. P. Kennedy, as atorney.

BUFFALO, N. Y.—Hall-Daw Mfg. Co. has been organized with $10,000 capital, to manufacture and deal in automobile parts, by L. A. Hallstead, H. and J. C. Dawson, with MacGregor & Dale, as attorneys.

BUFFALO, N. Y.—E. C. Storer, secretary of the school board, city hall, plans constructing 2-story, 300x300-foot Peckham vocational high school. W. B. Ittner, 408 Locust street, St. Louis, is consulting architect.

LONG ISLAND CITY, N. Y.—A $17,000 addition will be erected by the Fahnestock Electric Co., manufacturer of electric battery equipment. The proposed structure will be 1-story high, 50x100 feet.

MORRIS PARK, N. Y.—Long Island railroad has awarded contracts to John Thatcher & Son, 60 Park avenue, Brooklyn, for constructing 1-story, 115 x 148-foot brick motor shops. H. Redlein, Jamaica Station, Jamaica, L. I., is architect, and L. V. Morris, that address, is chief engineer.

NEW YORK—Public Service Weighing Machine Co. has been incorporated for $10,000 by M. Radin, S. Davidson and B. M. Dolberg, 215 Grand street.

NEW YORK—S. Bragman Cornice & Skylight Works, has been incorporated for $10,000 to manufacture and sell iron and steel work, by S. Bragman, M. Glatzer and H. Danzig, with B. Gassman, 63 Park Row, as attorney.

NEW YORK—Hollander Aircraft Engineering Corp. has been incorporated for $100,000 to manufacture and deal in flying apparatus, by M. Hollander, W. Ochs and S. Y. Beach, with M. Levin, 1 Madison avenue, as attorney.

NEW YORK—American Globe Wire Works, has been incorporated for $20,000 to manufacture and deal in wire products, by H. Surlak, G. A. Anderson and J. Micovsky, with F. Knorr, Albany, as attorney.

NEW YORK—Scott Block Co. has been incorporated to manufacture wood and metal products with 100 shares no par value stock, by J. S., M. S. and M. Libien, with L. F. Glaser, 2 Rector street, as attorney.

NEW YORK—Hurst Farr, has been organized with $20,000 capital, to manufacture and deal in screening, by J. Frost, D. Rubin and S. H. Goldberg, with Weinberg & Oltarsh, 158 Rivington street, as attorney.

NEW YORK—Hytest Valve of New York, has been incorporated for $10,000 to manufacture and deal in valves, by W. W. Weller, A. M. McCormack and L. B. Harrison, with M. I. St. John, 27 Cedar street, as attorney.

NEW YORK—Liberty Spring Bumper Mfg. Corp., has been incorporated for $200,000 to manufacture and deal in bumpers and machinery, by M. Mosesco, F. Smeter and S. Steta, with D. deMille, 1775 Broadway, as attorney.

NEW YORK—Kavadlo & Kaplan Iron Works has been incorporated for $10,000 to manufacture and deal in iron products, by M. Goldberg, S. Kavadlo and S. Kaplan, with S. Friedman, 220 Broadway, as attorney.

NEW YORK—Great Eastern Metals Corp. has been incorporated for $5000 to manufacture and deal in metals, by F. W. Demuth, E. C. Jones, Jr., and V. McLaughlin, with Glenn & Ganter, 27 William street, as attorney.

NEW YORK—Archer Armstrong has been incorporated with 100 shares no par value common stock, to manufacture and deal in machinery, by R. Kaufman, W. E. Godfrey and A. H. Marx, with Godfrey & Marx, 42 Broadway, as attorneys.

OSWEGO, N. Y.—Otis Sawyer Boiler & Foundry Co. has been organized for $40,000 to manufacture and repair boilers and operate a foundry, by J. F. Otis, W. F. and J. Sawyer, with J. L. Mournighan as attorney.

QUEENS, L. I., N. Y.—August Thomsen & Co., Inc., has been formed to deal in metals, tools, etc., by C. L. Thomsen, 9411 Ozone Park.

SCHENECTADY, N. Y.—General Electric Co. has plans for constructing 5-story, 80x255-foot plant for use as a laboratory, with a 1-story, 100x155-foot wing.

SYRACUSE, N. Y.—F. A. Austin, 301 Wallace street, has let contracts to J. D. Taylor Construction Co. for rebuilding 1-story brick pattern shop damaged by fire.

WATERTOWN, N. Y.—Condee Hardware Co., in care of W. W. Condee, plans constructing 1-story, 24 x 66-foot plant addition of brick and steel. Lansing & Green, Sherman building, are architects.

BIG PIGEON, N. C.—Plans are being completed for a $12,000,000 water power development on Pigeon River, 40 miles from Asheville, by the Asheville Power & Light Co. and its associate interests, the North Carolina Electrical Power Co., and the North Carolina & Pigeon River Power Co. A program calls for a hydroelectric plant generating 60,000 horsepower and in addition to an existing steam power plant capable of generating 8000 horsepower, and bringing the total power of the plant up to 17,000 horsepower. *Noted Nov.* 6.

FARGO, N. D.—Co-Operative Garage Co., has retained W. D. Gillespie as architect for 1-story garage at First avenue and Fourth street. Dr. W. E. Heller, 208 Equity building, is manager of the Co-Operative company.

AKRON, O.—Bessler Movable Stairway Co., 1900 East Market street, plans constructing plant, 5-story, 100 x 120-foot, to cost about

(*Continued on Page* 1330)

Iron and Steel Prices

Nuts and Bolts

F. o. b. Pittsburgh and Chicago district mills

Hot pressed square tapped or blank .....$4.50 off list
Hot pressed hexagon tapped or blank .....5.00 off list
Cold punched square or hexagon blank .....4.50 off list
Cold punched square or hexagon tapped .....4.50 off list
Cold punched semifinished hexagon nuts ⅝-inch and larger ..75, 10, 10 and 5 off
Cold punched semifinished hexagon nuts 9/16-inch and smaller..80, 10, 10 and 5 off
Price f.o.b. Pittsburgh, packages of 50.

CARRIAGE BOLTS

(½ x 6", smaller and shorter)

Rolled thread .....60 and 10 off
Cut thread (all sizes) .....60 off

MACHINE BOLTS

(½ x 4", hot pressed nuts)

Rolled thread .....60 and 20 off
Cut thread (all sizes) .....60 and 10 off

(All sizes cold punched nuts)

Cut thread .....50, 10 and 5 off
Lag screws .....70 off
Plow bolts Nos. 1, 2 and 3 heads.. .....50 and 10 off
4 to 10 heads .....50-10 + 20 off
Flat and round head stove bolts .....80, 10 and 5 off
Other stove bolts .....80, 10 and 10 off
Tap bolts .....30 off
Bolt ends with hot pressed nuts .....60 and 10 off
Bolt ends with cold punched nuts .....50 and 10 off
Blank bolts .....65 and 10 off
Rough stud bolts with nuts (250 pieces or more of a size) .....50 off

SEMIFINISHED CASTELLATED AND SLOTTED NUTS

Per 1000, Pittsburgh and Chicago

	S. A. E. Castellated	U. S. S. Slotted
¼	$ 4.25	$ 4.25
5/16	4.90	4.90
⅜	5.90	6.25
7/16	7.50	8.50
½	9.75	10.00
9/16	13.25	13.50
⅝	16.25	16.50
¾	22.50	23.00
⅞	34.00	34.00
1	53.00	55.00
1⅛	85.00	85.00
1¼	120.00	125.00
1⅜	170.00	170.00
1½	200.00	200.00

Larger sizes—Prices on application.

HEXAGON CAP AND SET SCREWS

Milled .....85 and 10 off
Upset .....85, 10, 10 and 5 off

Rivets

Structural rivets, carloads Pittsburgh and Cleveland.. 2.60c
Structural rivets, carloads, Chicago 2.75c
Rivets, 7/16-in. and smaller Pittsburgh and Cleveland..70, 10 and 5 off
Rivets, 7/16-in. and smaller Chicago .....70, 10 off

Washers

Wrought, c. l., Chicago dist. $5.75 to$6.15 off
Wrought, c. l., Pitts. dist.....$6.00 off
Lock washers f.o.b. factory .....80 off

Steel Pipe

Pittsburgh and Lorain basing discounts, jobbers' carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount or $4 per ton higher net.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis or $5 per ton higher net.

Butt Beld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½

Lap Weld

2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½

REAMED AND DRIFTED

Butt Weld

1 to 3-inch	60	48½

Lap Weld

2-inch	53	41½
2½ to 6-inch	57	45½

EXTRA STRONG—PLAIN ENDS

Butt Weld

⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½

Lap Weld

2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½

DOUBLE EXTRA STRONG

Butt Weld

½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½

Lap Weld

2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis

THREADS AND COUPLINGS

Butt Weld

¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13

Lap Weld

1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 6-inch	26	11
3 to 6-inch	28	13
7 to 12-inch	26	11

PLUGGED AND REAMED

Two points less than above

EXTRA STRONG, PLAIN ENDS

Butt Weld

¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14

Lap Weld

2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld

½-inch	+47½	+59½
½-inch	+28	+40
1-inch	+34	+40
1¼-inch	+28	+40
1½-inch	+27	+39

Lap Weld

2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

Boiler Tubes

Pittsburgh less carload discounts. Carload 4 points larger

STEEL (Lap Welded)

2 and 2¼-inch ..... 23 off
2½ and 2¾-inch ..... 33 off
3-inch ..... 36 off
3¼ to 3¾-inch .....38½ off
4 to 13-inch ..... 42 off

CHARCOAL IRON

1½-inch ..... +22
1¾-inch ..... +12
2 and 2¼-inch ..... + 2
2½ to 3-inch 3
3¼ to 4½-inch 5

SEAMLESS COLD DRAWN*

1-inch ..... 51 off
1¼ and 1½-inch ..... 43 off
1¾-inch ..... 27 off
2 and 2¼-inch ..... 18 off
2½ and 2¾-inch ..... 28 off
3 and 3¼-inch ..... 32 off
3½ and 3¾-inch ..... 33 off
4-inch ..... 37 off
4½ and 5-inch ..... 29 off

SEAMLESS HOT HOLLED*

3 and 3¼-inch ..... 34 off
3½ and 3¾-inch ..... 35 off
4-inch ..... 39 off

SEAMLESS STEEL MERCHANT BOILER TUBES*

Extras:

Add $8 per net ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING*

Base Discounts

Carbon, 0.10 to 0.20 per cent ..... 83 off
Carbon, 0.30 to 0.40 per cent .... 81 off
Carbon, 0.40 to 0.50 per cent ....net price

Plus differentials and extras for cutting.

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES*

Outside diameter	Net prices per foot f.o.b. Pittsburgh Gage	Price
2-inch	12-gage	15c
2-inch	12-gage	15c
2-inch	11-gage	16c
2-inch	10-gage	17c
2¼-inch	12-gage	17c
2¼-inch	11-gage	18c
2¼-inch	10-gage	20c
3-inch	7-gage	35c
1½-inch	9-gage	15c
5⅜-inch	9-gage	55c
5½-inch	9-gage	57c

Plus usual extras for forming and for long lengths.

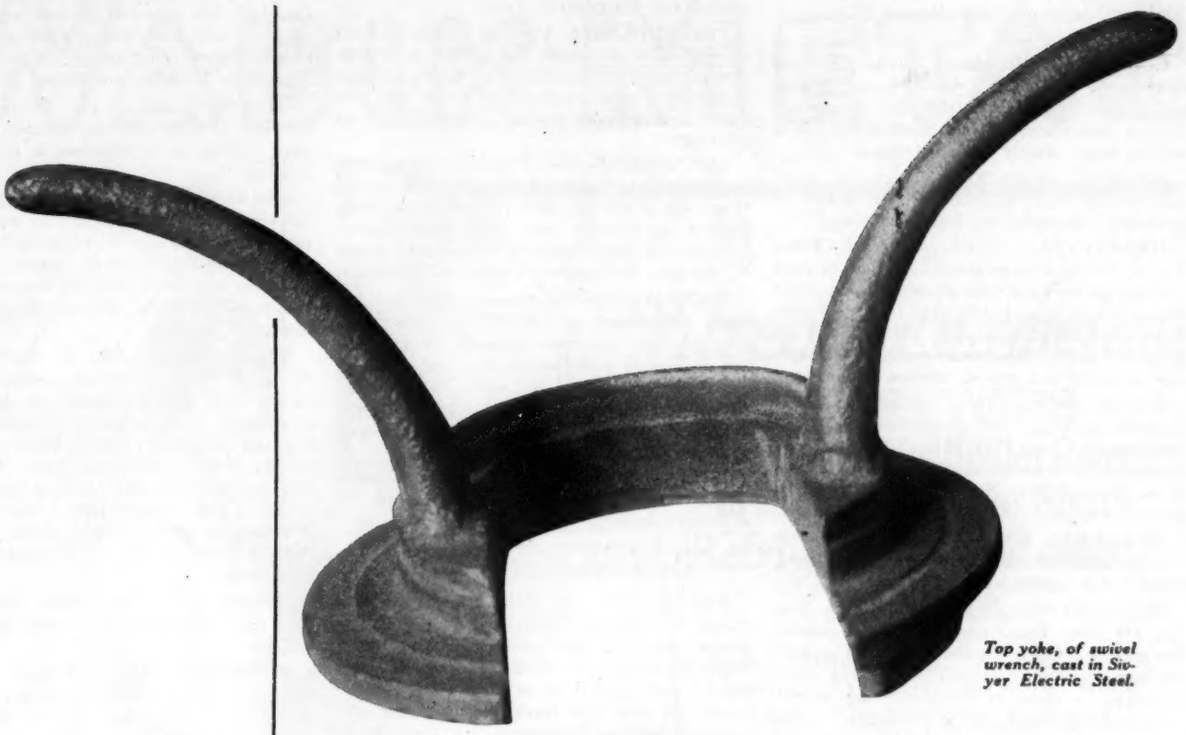
*Published discounts are subject to considerable shading, in some cases as much as three to five extra 5 per cents.

Cast Iron Water Pipe

Prices per net ton

Class B Pipe

Four-inch, Chicago ..... 54.20 to 55.20
Six-inch and over, Chicago .. 50.20 to 51.20
Four-inch, Birmingham .... 46.00 to 47.00
Six-inch and over Birmingham 42.00 to 43.00
Four-inch, New York ..... 64.50 to 65.60
Six-inch and over, New York 59.50 to 60.60
Standard fittings, Birmingham, base..$110.00
6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, $5 higher.
Class A pipe is $5 higher than Class B.



Top yoke, of swivel wrench, cast in Sivyer Electric Steel.

Where Iron Breaks or Bends and Forgings are Impractical

THE swivel wrench, to which the top yoke shown above belongs, is winning the favorable attention of many buyers. Its advantages are not confined to its effective design, but include the fact that the top yoke is cast in Sivyer Electric Steel. If it were made of gray iron, it would have a tendency to break under strain. If it were made of malleable iron, it would have a tendency to bend, and if it broke it could not be welded. It is impractical to forge because of its design. As cast in Sivyer Electric Steel it is extraordinarily elastic and strong—and if it should ever break, it could be welded. These and many other advantages of Sivyer Electric Steel are leading more and more manufacturers of oil-well machinery and tools to use it where they formerly used iron or forgings. Its interior integrity, trueness to pattern and honest surfaces provide the flawless quality and unfailing strength that the men in the field demand.

Sivyer castings can be forged and welded

SIVYER S CASTINGS

DEPENDABLE

Send Blue Prints

During the last seven years, many manufacturers who were having difficulty with forged parts—or with ordinary steel castings—have come to us for a solution of their difficulties.

Very often, of course, the manufacturer's problems arise from the shortcomings of ordinary cast steel. When certain sections of a design vary sharply in thickness, it is difficult to cast them in ordinary steel. Open hearth practice does not permit the high temperature necessary for pouring extremely thin sections or intricate design.

With Sivyer Electric Steel and with Sivyer developments of molding practice, many things can be done that are impractical to open hearth steel.

If you are having trouble with parts that in the past have been hammer forged, or cast in ordinary steel, send us your blue prints together with a statement of your difficulties. We will be glad to study the problems involved and recommend possible solutions, without obligation on your part.

SIVYER STEEL

SIVYER STEEL CASTING COMPANY, MILWAUKEE

Construction and Enterprise

(*Continued from Page 1327*)

$125,000 or $150,000.

CLEVELAND—Cleveland Railway Co. has retained the Watson Co., 4614 Prospect avenue, as architect for a substation and garage on Central avenue east of East Ninth street. Bids will be taken shortly for construction.

KENT, O.—Miller Keyless Lock Co. plans constructing plant addition. J. B. Miller is president. Maturity of plans indefinite.

HENRYETTA, OKLA.—Oklahoma Power Co. is erecting a large generating plant to serve the oil field territory with electric power. Other extensions in central Oklahoma including new plants and transmission lines are contemplated. Fred W. Insull, Commercial building, Tulsa, is vice president and general manager.

TULSA, OKLA.—Tulsa Oxygen Co., First National building, has awarded contracts for constructing 1-story, 54x175-foot plant for manufacture of oxygen for use in acetylene torches. J. R. Burnside, 315 South Frankfort street, is general contractor.

SILVERTON, OREG.—Silverton Blow Pipe Co. has asked for bids for constructing a plant, foundry and warehouse.

PHILADELPHIA—The Wm. Steele & Sons Co., 219 North Broad street, have been awarded the general contract for the erection of a $10,000 warehouse for Brownhill & Kamerer, to be erected at the corner of Memphis & Earl streets.

PHILADELPHIA—David Sokolow, 3130 Clifford street, plans 2-story, 60x210-foot brick and steel garage and repair shop on Wingohocking and Fairhill streets. L. W. Levin, 1101 Chestnut street, is architect.

PHILADELPHIA.—The Simplex Valve & Meter Co., 309 Fidelity building, is having plans prepared by A. E. Wightman, Bankers Trust building, architect, for a 1-story building, 90 x 175 feet, to be erected at Woodland avenue and Sixty-eighth street.

PHILADELPHIA—Contract for the erection of a $350,000 warehouse and garage on Willow avenue, has been awarded by A. Finkenbergs Sons, 2279 Third avenue, New York. The proposed structure will be six stories high, 110x200 feet.

PITTSBURGH—The Pittsburgh Contracting & Engineering Co. has been granted a charter to operate in this city, with $25,000 capital, to do general construction and engineering. Incorporators are Max Egerman, Homestead; Harry B. McCain, McKeesport; Joseph M. Hollander.

PITTSBURGH—The Howard Coal Co. has been incorporated at $20,000 for mining and preparing coal and other minerals for the market, to operate in Swissvale, Pa. Incorporators are W. Z. Luther, 818 Hill street, Wilkinsburg; W. M. Sheriden, 659 Maryland avenue, Pittsburgh, and Joseph Finerty, 910 Negley avenue, Pittsburgh.

POTTSTOWN, PA.—The Reading Foundry Co. has purchased a 180 x 240-foot site for a foundry building.

Business in Canada

PENTICTON, B. C.—West Kootenay Power & Light Co., will build addition to its power plant here and install equipment to increase the capacity by 60,000 horsepower, bringing the total capacity up to about 100,000 horsepower. A new high tension line is under construction between Bonnington and Trail, B. C.

VANCOUVER, B. C.—Scott Engineering Co., Ltd., has been incorporated for $100,000 to manufacture and deal in all kinds of machinery at South Vancouver.

OTTAWA, ONT.—The Beach Foundry Co., will build addition to its plant to be used as assembly shop to cost approximately $10,000.

TORONTO, ONT.—May Intensifying Globe Co., Ltd., has been incorporated to manufacture electrical appliances with $50,000 capital stock, and provisional directors of Willis B. Sturrup, Thomas S. H. Giles and Roland F. Wilson.

WINDSOR, ONT.—The Auto Specialties Co., has awarded general contract for $15,000 plant addition to S. Dinsmore & Co., Universal building.

WINDSOR, ONT.—Solar Battery Co., Ltd., has been incorporated to carry on the business of electrical and mechanical engineers, to manufacture and deal in engines, dynamos, generators, batteries, etc., with $100,000 capital stock, by William H. Furlong, Bernard H. Furlong and Morice G. Smith.

WINDSOR, ONT.—R. B. Braid, secretary, the Essex Border Utilities commission in receiving bids until November 26, for the construction of pumping station; pumping machinery and equipment; switchboard equipment; valves; venturi meters automatic float regulator; traveling screens; traveling hand operated crane; cast iron pipe; feed machines chlorinators; electric wiring, power connections, etc. J. Clark Keith is chief engineer for the commission.

GANBY, QUE.—The Ganby Electric Web Co., will build addition to plant here to cost $40,000.

MONTREAL, QUE.—The Carter White Lead Co. of Canada, Ltd., Delormier Ave., has awarded general contract to W. H. Madigan, 949 Atwater Ave., for addition and repairs to factory.

SHAWVILLE, QUE.—The municipal power plant here recently damaged by fire with a loss of $15,000 will be rebuilt and new equipment purchased. E. T. Hodgins is secretary and treasurer.

New Trade Publications

CHUCKS—New types of chucks added since the publication of its recent catalog are presented in a bulletin by the Skinner Chuck Co., New Britain, Conn.

GRINDING WHEELS—Factor affecting the selection of grinding wheels are set forth at some length in a booklet by the Norton Co., Worcester, Mass.

RAILROAD SUPPLIES—The Walter A. Zelnicker Supply Co., St. Louis, has issued a bulletin of locomotives, cars, rails and other equipment for railroad use.

CASTERS—Ball bearing service casters with a frictionless pivot are described in a booklet by the Service Caster & Truck Co., Albion, Mich., which gives information as to types and uses.

SHEET METAL EQUIPMENT—Materials and machinery used in sheet metal work are featured in a 248-page general catalog issued by that company.

ELECTRIC HOISTS—Floor operated hoists manufactured by the Shepard Crane & Hoist Co., Montour Falls, N. Y., are described in a catalog just published. Comprehensive data and illustrations show the equipment in actual installations.

HIGH FREQUENCY CONVERTER—Production of alloys of all melting points in small furnaces is made possible by the high frequency converter supplied by the Ajax Electrothermic Corp., Trenton, N. J., which is illustrated in its various applications in a current bulletin.

STEAM PURIFIERS—A survey by the A. C. Neilsen Co., covering an installation of steam purifiers in the plant of the American Smelting & Refining Co. at Omaha, tells of results obtained by the use of devices manufactured by the Andrews-Bradshaw Co., Pittsburgh.

BORING TOOLS—Economies in boring with expansion tools and reamers are described in a catalog by the Davis Boring Tool Co., St. Louis. Text and illustrations describe the new plant and the engineering service of the company and the remainder of the catalog is devoted to the various types of tools and data as to their use.

BOLTS AND SCREWS—In addition to a complete catalog of its products the Atlas Bolt & Screw Co., Cleveland, O., has included in its current catalog excerpts from the report of the national screw thread commission. This section of the book contains a wealth of information for the technical departments of manufacturing establishments.

ROTARY DISPLACEMENT METER—An improved design of meter is described in a bulletin by the Connersville Blower Co., Connersville, Ind., the principal change being location of the bearings in a chamber at the ends of the impeller shafts, several intervening chambers protecting them from impurities in the gases. Operation of the meters and data of capacities and dimensions are given.

POWER PUNCHES AND SHEARS—With 68 years of experience in the production of power punches and shears the Long & Allstatter Co., Hamilton, O., has issued a bulletin calling attention to its products and their application to a wide variety of uses. Fabrication of metal in plates, bars and shapes is facilitated by the use of the various machines there depicted.

FORGING STEELS—The trend towards better carbon steels is presented in a 30-page booklet recently issued by the Pittsburgh Crucible Steel Co., Pittsburgh. Typical uses of forging steels are listed and the important steps in their manufacture cited. A log of two open-hearth heats showing the chemical and physical composition, the latter plotted, are presented on the final pages. Various interior views of steelworks departments are included.

INDUSTRIAL CARRIERS—A different method of handling material is provided in the carrier manufactured by the Ross Carrier Co., Benton Harbor, Mich., a full description of which is given in a booklet by that company. This carrier is designed for unusually long or high loads, which are placed on platforms or in boxes and are picked up and transported by the carrier, which straddles the load.

CARBURIZING STEELS—A 30-page booklet is being distributed by the Pittsburgh Crucible Steel Co., Pittsburgh discussing the conditions upon which the quantity of carbon absorbed by steel is dependent. A few details associated with the manufacture and testing of carburizing steels are presented. Specifications for a straight carbon steel that will carburize uniformly, nickel chrome steel and nickel steels of various percentages are included in the booklet in addition to various micrographs and interior views of the company's works at Midland, Pa.

WABIK METAL

for
Vitreous Enameling

TABLE TOPS
Splasher Backs: Broiler Pans: Stove Door Panels: Signs: Refrigerators: and other flat work

Wabik Metal Sheets, like all other Mansfield Products, are rolled from our own "Bottom-poured Ingots." They are very low in sulphur.

Other Specialties:

Body Stock; Flat Fender and Hood Stock; Cowl Stock; Radiator Casing Stock; Crown Fender Stock.

METAL FURNITURE SHEETS

PICKELED and ANNEALED ENAMELING STOCK for Kitchen Utensils

MILK CAN STOCK

"Mansfield" Steel is the ultimate in Sheet Bars and in Sheets. It means satisfaction to all of the many users. Constant study of the needs of users, and continuous application of the results of such study, in the way of improved methods in our plants has established a reputation for unsurpassed reliability.

We invite your inquiries.

SHEET BARS and INGOTS

MANSFIELD SHEET & TIN PLATE COMPANY
MANSFIELD, OHIO

DISTRICT SALES REPRESENTATIVES

The L. D. Rockwell Co., 1106 National City Bldg., New York, N. Y.
Mansfield Sheet & Tin Plate Co., 1372 Wrigley Bldg., Chicago, Ill.
Mansfield Sheet & Tin Plate Co., 12-237 General Motors Bldg., Detroit, Mich.
The L. D. Rockwell Co., 2002 Union Trust Bldg., Cleveland, O.
Wm. L. Hoffman, 1504 West Venango St., Philadelphia, Pa.
Mr. C. H. Beach, 617 Merchants Bank Bldg., Indianapolis, Ind.
Mr. A. P. Grenier, 640 Endicott Bldg., St. Paul, Minn.
Wm. P. Horn Co., 237 Rialto Bldg., San Francisco, Cal.
Wm. P. Horn Co., 301 Kerchoff Bldg., Los Angeles, Cal.
Wm. P. Horn Co., Dekum Building, Portland, Ore.
Wm. P. Horn Co., 1426 L. C. Smith Bldg., Seattle, Wash.

Iron and Steel Scrap Prices

CORRECTED TO TUESDAY NOON GROSS TONS DELIVERED TO CONSUMER

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	11.50 to 12.00
Boston (dealers)	12.50 to 13.00
Buffalo	17.50 to 18.00
Chicago	17.00 to 17.50
Cleveland	16.50 to 17.00
Cincinnati (dealers)	14.00 to 14.50
Detroit (dealers)	14.00 to 14.50
Eastern Pennsylvania	16.50 to 17.50
New York (dealers)	12.50 to 13.00
Pittsburgh	20.00 to 20.50
St. Louis	15.75 to 16.25
Valleys	18.50 to 19.00
No. 1 railroad steel New York (dealers)	13.00 to 13.50

COMPRESSED SHEETS

Buffalo	16.00 to 16.50
Chicago	13.50 to 14.00
Cleveland	14.25 to 14.50
Detroit (dealers)	11.50 to 12.00
Pittsburgh	17.50 to 18.00
Valleys	16.25 to 16.50

BUNDLED SHEETS

Buffalo	14.00 to 14.50
Cincinnati (dealers)	10.00 to 10.50
Cleveland	13.00 to 13.50
Detroit	10.00 to 10.50
Eastern Pennsylvania	14.50
Pittsburgh	16.00 to 16.50
St. Louis	10.00 to 10.50
Valleys	14.50 to 14.75

SHEET CLIPPINGS, LOOSE

Chicago	9.25 to 9.75
Detroit	9.00 to 9.50

STEEL RAILS, SHORT

Birmingham	12.50 to 13.00
Detroit, No. 2	14.00 to 14.50
Chicago	18.25 to 18.75
Cincinnati (dealers)	15.00 to 15.50
Cleveland (over 6 ft.)	16.00 to 16.75
St. Louis	18.00 to 18.50

STOVE PLATE

Birmingham	13.50 to 14.00
Boston (consumers)	14.50 to 15.00
Buffalo	15.00 to 15.50
Chicago	17.00 to 17.50
Cincinnati (dealers)	10.50 to 11.00
Cleveland	14.00 to 14.25
Detroit (net tons) dealers	13.50 to 14.00
Eastern Pennsylvania	15.00
New York (dealers)	12.00 to 12.50
Pittsburgh	14.50 to 15.00
St. Louis	15.00 to 15.50

LOW PHOSPHORUS

Buffalo	19.00 to 19.50
Cincinnati (dealers)	16.00 to 16.50
Eastern Pennsylvania	20.50 to 21.50
Pitts. billet and bloom crops	23.50 to 24.00

SHOVELING STEEL

Chicago	16.75 to 17.25
Pittsburgh	15.00 to 15.50
St. Louis	15.75 to 16.25

KNUCKLES, COUPLERS, SPRINGS

Chicago	19.00 to 19.50
Eastern Pennsylvania	19.00 to 20.00
Pittsburgh	21.00 to 21.50
St. Louis	19.00 to 19.50

FROGS, SWITCHES, GUARDS

Chicago	17.25 to 17.75
Eastern Pennsylvania	16.50 to 17.00
St. Louis	17.00 to 17.50

BOILER PLATE, CUT

St. Louis	10.00 to 10.50

ANGLE BARS—STEEL

Chicago	18.00 to 18.50
St. Louis	17.50 to 18.00

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	$12.00 to 13.00
Boston (dealers)	13.50 to 14.00
Buffalo	16.00 to 16.50
Cleveland, No. 1	14.00 to 14.50
Chicago, No. 1	16.75 to 17.25
Chicago, No. 2	17.00 to 17.50
Cincinnati, No. 1 (dealers)	12.00 to 12.50
Detroit, No. 2	14.00 to 14.50
Eastern Pennsylvania	18.50 to 19.00
New York, No. 1 (dealers)	15.00 to 15.50
Pittsburgh, No. 1	15.50 to 16.00
Pittsburgh, No. 2	20.00 to 20.50
St. Louis, No. 1	15.00 to 15.50
St. Louis, No. 2	15.75 to 16.25

WROUGHT PIPE

Boston (dealers)	11.50 to 12.00
Buffalo	11.00 to 12.00
Eastern Pennsylvania	16.50 to 17.00
New York (dealers)	11.75 to 12.25

YARD WROUGHT

Boston	12.50 to 13.00
Eastern Pennsylvania	17.00 to 18.00

CITY WROUGHT

New York, long	13.50 to 14.00

BUSHELING

Buffalo	14.00 to 14.50
Chicago, No. 1	14.50 to 15.00
Chicago, No. 2	10.00 to 10.50
Cincinnati, No. 1 (dealers)	10.50 to 11.00
Cleveland, No. 1	14.25 to 14.50
Cleveland, No. 2	13.00 to 13.50
Detroit, No. 1	11.50 to 12.00
Detroit, No. 2 (new)	11.00 to 11.50
Detroit, No. 2 (old)	10.50 to 11.00
Eastern Pennsylvania	14.00 to 14.50
Pittsburgh, No. 1	14.50 to 15.00
St. Louis, No. 1	15.00 to 15.50

MACHINE SHOP TURNINGS

Birmingham	6.00 to 7.00
Boston (dealers)	9.00 to 9.25
Buffalo	12.00 to 12.50
Chicago	9.50 to 10.00
Cincinnati (dealers)	10.50 to 11.00
Cleveland	14.25 to 14.50
Detroit (dealers)	10.00 to 10.50
Eastern Pennsylvania	14.00 to 14.50
New York (dealers)	9.50 to 10.00
Pittsburgh	16.00 to 16.50
St. Louis	8.50 to 9.00
Valleys	13.75 to 14.00

CAST IRON BORINGS

Birmingham (chemical)	15.00 to 16.00
Birmingham (plain)	7.00 to 8.00
Boston (chemical)	11.50 to 12.00
Boston (dealers)	8.50 to 9.00
Buffalo	13.00 to 13.50
Chicago	12.25 to 12.75
Cincinnati (dealers)	10.50 to 11.00
Cleveland	14.75 to 15.00
Detroit (dealers)	10.50 to 11.00
Eastern Pennsylvania (chem.)	16.50 to 17.00
Eastern Pennsylvania	14.00 to 14.50
New York (dealers)	9.75 to 10.25
Pittsburgh	16.00 to 16.50
St. Louis	12.00 to 12.50
Valleys	15.25 to 15.50

MIXED BORINGS AND TURNINGS
For blast furnace use

Boston (dealers)	8.00 to 8.50
Detroit (dealers)	10.50 to 11.00
Eastern Pennsylvania	12.50 to 13.50
New York (dealers)	9.25 to 9.75

IRON AXLES

Birmingham	17.00 to 18.00
Boston (consumers)	31.00 to 32.00
Buffalo	25.00
Chicago	29.50 to 30.00
Cincinnati (dealers)	21.50 to 22.00
St. Louis	27.00 to 27.50
Eastern Pennsylvania	29.00 to 31.00

IRON RAILS

Buffalo	18.00 to 18.50
Chicago	18.25 to 18.75
Cincinnati (dealers)	12.00 to 12.50
St. Louis	18.00 to 18.50

PIPES AND FLUES

Chicago	12.50 to 13.00
Cincinnati (dealers)	8.50 to 9.00
Cleveland	13.00 to 13.50
St. Louis	11.50 to 12.00

RAILROAD GRATE BARS

Buffalo	14.50 to 15.00
Chicago	16.50 to 17.00
Cleveland	14.00 to 14.50
Eastern Pennsylvania	15.00 to 15.50
New York (dealers)	13.00 to 13.50
St. Louis	15.50 to 16.00

FORGE FLASHINGS

Boston (dealers)	9.00 to 9.50
Buffalo	13.00 to 13.50
Chicago	12.50 to 13.00
Cleveland (under 10 in.)	14.00 to 14.25
Cleveland (over 10 in.)	12.75 to 13.00
Detroit (dealers)	10.50 to 11.00
Pittsburgh	13.00 to 13.50

FORGE SCRAP

Boston (dealers)	8.50 to 9.00
Chicago	19.00 to 19.50
Eastern Pennsylvania	14.00 to 14.50

ARCH BARS AND TRANSOMS

Chicago	22.00 to 22.50
St. Louis	21.00 to 21.50

ANGLE BARS—IRON

Chicago	19.50 to 20.00
St. Louis	19.00 to 19.50

Iron and Steel Works Scrap

AXLE TURNINGS

Boston (dealers)	8.50 to 9.00
Buffalo	14.50 to 15.00
Chicago	14.00 to 14.50
Cleveland	15.25 to 15.50
Eastern Pennsylvania	15.00 to 15.50
Pittsburgh	16.50 to 17.00
St. Louis	13.00 to 13.50

STEEL CAR AXLES

Birmingham	16.50 to 17.50
Boston (consumers)	21.00 to 21.50
Buffalo	23.00 to 24.00
Chicago	20.00 to 20.50
Cleveland	18.00 to 18.50
Eastern Pennsylvania	23.00 to 24.00
Pittsburgh	21.50 to 22.00
St. Louis	21.00 to 21.50

SHAFTING

Boston (consumers)	21.00 to 21.50
Chicago	21.50 to 22.00
Eastern Pennsylvania	23.00 to 25.00
New York (dealers)	18.50 to 19.50
St. Louis	20.00 to 20.50

Iron Foundry Scrap

CAR WHEELS

Birmingham, tram car	14.00 to 15.00
Birmingham, iron	14.00 to 14.50
Boston (consumers)	17.00 to 17.50
Buffalo	17.00 to 18.00
Chicago, iron	18.00 to 18.50
Chicago, steel	20.00 to 20.50
Cincinnati	12.50 to 13.00
Eastern Pennsylvania	17.50 to 18.00
New York iron (dealers)	14.75 to 15.25
Pittsburgh, iron	19.00 to 19.50
Pittsburgh, steel	21.00 to 21.50
St. Louis, iron	18.00 to 18.50
St. Louis steel	19.00 to 19.50

NO. 1 CAST SCRAP

Birmingham, cupola	14.50 to 15.50
Boston (consumers)	18.50 to 19.00
Buffalo	17.00 to 17.50
Chicago, No. 1 machinery	19.00 to 19.50
Chicago No. 1 railroad or agricultural	18.50 to 19.00
Cincinnati No. 1 machinery cupola (net tons dealers)	18.50 to 19.00
Cleveland, cupola	19.00 to 19.25
Detroit (net tons) (dealers)	15.50 to 16.00
Eastern Pennsylvania, cupola	18.00 to 18.50
New York, cupola (dealers)	14.75 to 15.25
Pittsburgh, cupola	18.00 to 18.50
San Francisco, delivered	24.00
Seattle	18.00 to 20.00
St. Louis, railroad	19.50 to 20.00
St. Louis, agricultural	19.00 to 19.50
Valleys	19.00 to 19.25

HEAVY CAST

Boston (consumers)	16.00 to 17.00
Buffalo (breakable)	16.00 to 16.50
Cleveland	13.25 to 13.75
Detroit (automobile) (net ton)	15.50 to 16.00
Eastern Pennsylvania	16.50
New York (dealers)	13.50 to 14.00
Pittsburgh	16.50 to 17.00

MALLEABLE

Boston (railroad)	17.25 to 17.75
Buffalo	17.50 to 18.00
Chicago, railroad	19.00 to 19.50
Chicago, agricultural	17.00 to 17.50
Cincinnati, agricultural (dealers)	15.50 to 16.00
Cincinnati, railroad (dealers)	14.50 to 15.00
Cleveland, agricultural	18.25 to 18.50
Cleveland, railroad	18.50 to 19.00
Detroit (dealers)	15.50 to 16.00
Eastern Pennsylvania, railroad	15.50 to 16.50
Pittsburgh, railroad	18.50 to 19.00
St. Louis, agricultural	16.00 to 16.50
St. Louis, railroad	16.00 to 16.50

Miscellaneous Scrap

RAILS FOR ROLLING
5 feet and over

Birmingham tram car	15.00 to 15.50
Boston (dealers)	13.00 to 13.50
Chicago	17.50 to 18.00
Cleveland	17.00 to 17.25
Detroit	13.50 to 14.00
Eastern Pennsylvania	18.50
New York (dealers)	15.50 to 16.00
Pittsburgh district	19.50 to 20.00
St. Louis	17.75 to 18.25

LOCOMOTIVE TIRES

Chicago	18.75 to 19.25
St. Louis	18.00 to 18.50

LOW PHOSPHORUS PUNCHINGS

Chicago	18.00 to 18.50
Eastern Pennsylvania	19.00 to 20.00
Pittsburgh	21.00 to 21.50

Why Your Sales Campaign for 1925

Should Start Off With Liberal Space in the Annual Issue of *Iron Trade Review*

Because—

Seventy per cent of the metalworking and engineering industry of this country is located within a radius of 500 miles of *Iron Trade Review* headquarters. On account of its geographical and postal advantages, *Iron Trade Review* is *the first paper* to be seen and read by the executives in this industry.

Because—

The abolition of "Pittsburgh Plus" has made the market paper absolutely indispensable to the consumer of steel in any form. Before now some thought they could get along fairly well knowing that steel prices were standardized at Pittsburgh but now the only chart the iron and steel buyer has to steer by is his market paper. We realize our responsibility and will measure up to the high standard required of us as specialists in market information. The 28,000 executives who now read *Iron Trade Review* will read and study it more carefully and completely than ever before thus increasing the already established advertising value of the "market paper".

Because—

Your advertisement in the annual issue of *Iron Trade Review*, the great *Yearbook of Industry*, will be constantly at work for you throughout the whole of next year helping you to make 1925 the greatest business year in your history.

The Yearbook of Industry
January 1, 1925

IRON TRADE REVIEW

Cleveland, Ohio

Iron and Steel Production

Compiled By IRON TRADE REVIEW

Pig Iron

	-Stacks- No.	In	—Output— Total	Av. daily
1907				
January	376	311	2,174,801	70,155
February	374	308	2,047,036	73,109
March	377	304	2,186,709	70,539
April	378	327	2,226,708	74,223
May	391	329	2,291,030	73,904
June	392	341	2,237,420	74,580
July	396	335	2,253,243	72,685
August	397	329	2,243,656	72,376
September	399	329	2,174,148	72,471
October	401	314	2,359,690	76,119
November	398	226	1,820,558	60,685
December	398	154	1,234,733	39,830
Total			25,249,732	
1908				
January	398	139	1,081,813	34,897
February	401	150	1,086,809	37,476
March	398	154	1,229,856	39,672
April	398	146	1,155,122	38,504
May	396	145	1,168,002	37,677
June	395	154	1,106,300	36,876
July	397	166	1,228,604	39,632
August	399	181	1,366,019	44,065
September	399	189	1,416,252	47,208
October	400	200	1,573,824	50,764
November	402	212	1,582,314	52,744
December	403	221	1,723,664	55,602
Total			15,718,579	
1909				
January	406	234	1,787,473	57,683
February	407	233	1,682,470	60,088
March	406	229	1,822,024	58,793
April	406	224	1,731,406	57,687
May	407	236	1,866,757	60,218
June	408	240	1,929,929	64,334
July	409	258	2,088,620	67,375
August	412	278	2,232,642	72,021
September	413	297	2,378,655	79,201
October	413	309	2,589,681	83,538
November	414	311	2,532,740	84,425
December	416	314	2,682,702	86,539
Total			25,325,099	
1910				
January	416	311	2,599,995	83,871
February	417	311	2,429,525	86,768
March	417	310	2,588,736	83,508
April	418	291	2,477,700	82,590
May	419	279	2,374,802	76,607
June	420	271	2,288,279	76,276
July	420	254	2,158,124	69,617
August	422	244	2,103,791	67,864
September	420	234	2,048,461	68,282
October	421	230	2,086,205	67,297
November	421	218	1,910,385	63,679
December	421	193	1,779,899	57,416
Total			26,845,902	
1911				
January	421	210	1,766,658	56,985
February	421	226	1,781,285	63,617
March	421	236	2,165,764	69,863
April	421	220	2,044,904	68,163
May	421	206	1,871,888	60,367
June	421	202	1,773,282	59,109
July	423	196	1,776,108	57,294
August	423	206	1,921,832	61,995
September	423	216	1,973,918	65,797
October	421	214	2,092,061	67,486
November	421	214	1,999,100	66,637
December	422	215	2,032,301	65,558
Total			23,198,601	
1912				
January	421	227	2,052,806	66,220
February	422	235	2,098,796	72,372
March	420	237	2,411,529	77,791
April	421	239	2,377,621	79,254
May	423	243	2,503,341	80,753
June	424	242	2,433,737	81,125
July	422	245	2,402,567	77,502
August	423	255	2,500,163	80,650
September	419	262	2,444,454	81,482
October	422	280	2,683,645	86,569
November	423	289	2,639,562	87,985
December	423	291	2,777,292	89,590
Total			29,325,513	
1913				
January	423	297	2,787,800	89,929
February	423	306	2,578,670	92,095
March	423	278	2,762,823	89,123
April	421	297	2,754,353	91,812
May	421	285	2,816,825	90,865
June	422	283	2,616,883	87,229
July	422	264	2,558,275	82,525
August	424	260	2,537,018	81,839
September	425	258	2,494,098	83,137
October	425	244	2,539,924	81,933
November	424	225	2,229,960	74,322
December	424	191	1,976,138	63,746
Total			30,652,767	
1914				
January	423	199	1,879,336	60,624
February	423	219	1,888,607	67,450
March	423	232	2,341,551	75,534
April	422	212	2,261,501	75,383
May	422	198	2,097,019	67,646
June	422	193	1,904,566	63,486
July	422	187	1,955,324	63,075
August	422	187	1,996,483	64,403
September	422	180	1,882,718	62,757
October	422	162	1,767,227	57,007
November	421	150	1,501,269	50,042
December	421	154	1,495,325	48,236
Total			22,970,926	
1915				
January	421	165	1,591,024	51,323
February	421	179	1,666,592	59,521
March	421	190	2,046,280	66,009
April	421	197	2,114,518	70,484
May	421	207	2,255,157	72,747
June	421	221	2,369,932	78,998
July	421	234	2,563,311	82,687
August	421	246	2,774,825	89,510
September	420	266	2,834,342	94,478
October	420	276	3,120,340	100,656
November	421	285	3,035,235	101,174
December	421	295	3,201,605	103,278
Total			29,573,161	
1916				
January	421	304	3,171,878	102,319
February	421	312	3,078,548	106,157
March	422	315	3,327,630	107,343
April	422	320	3,225,496	107,517
May	423	321	3,364,584	108,535
June	423	325	3,213,818	107,127
July	419	316	3,221,127	103,907
August	419	317	3,197,838	103,156
September	419	326	3,208,041	106,935
October	419	328	3,508,180	113,167
November	420	322	3,317,805	110,593
December	422	309	3,184,178	102,715
Total			39,019,123	
1917				
January	422	310	3,159,839	101,930
February	422	317	2,649,935	94,641
March	423	331	3,255,813	105,026
April	425	333	3,328,061	110,936
May	425	340	3,413,677	110,119
June	427	347	3,260,234	108,675
July	429	351	3,337,442	107,659
August	431	357	3,238,970	104,483
September	431	342	3,140,742	104,691
October	433	354	3,296,286	106,332
November	434	344	3,198,597	106,620
December	435	321	2,885,380	93,077
Total			38,164,976	
1918				
January	435	294	2,403,227	77,523
February	435	319	2,318,242	82,723
March	438	338	3,209,996	103,548
April	437	351	3,273,355	109,112
May	437	360	3,451,884	111,351
June	437	353	3,316,148	110,538
July	437	364	3,408,584	109,954
August	439	371	3,378,479	108,983
September	438	364	3,413,223	113,774
October	437	364	3,482,392	112,335
November	437	360	3,347,844	111,595
December	435	351	3,434,114	110,778
Total			38,437,488	
1919				
January	435	330	3,306,279	106,654
February	435	311	2,943,347	105,120
March	435	279	3,088,023	99,614
April	435	216	2,474,374	82,479
May	433	197	2,107,729	67,991
June	433	199	2,114,028	70,467
July	434	240	2,424,212	78,200
August	432	266	2,742,081	88,453
September	433	163	2,480,790	82,692
October	432	216	1,864,424	60,142
November	432	252	2,407,369	80,244
December	432	262	2,626,074	84,711
Total			30,578,730	
1920				
January	432	285	3,012,373	97,172
February	432	305	2,984,257	102,904
March	433	315	3,375,768	108,895
April	433	278	2,752,670	91,754
May	433	297	2,991,825	96,510
June	433	302	3,046,623	101,553
July	434	291	3,043,918	98,190
August	434	306	3,145,536	101,468
September	434	317	3,124,308	104,143
October	435	290	3,288,341	106,075
November	435	255	2,935,081	97,836
December	435	202	2,700,268	87,105
Total			36,400,968	
1921				
January	436	184	2,414,753	77,895
February	436	155	1,929,394	68,906
March	436	103	1,594,866	51,447
April	436	96	1,190,751	39,691
May	436	90	1,215,272	39,202
June	436	74	1,064,007	35,466
July	435	69	864,642	27,892
August	436	69	954,901	30,802
September	435	84	985,795	32,859
October	435	95	1,234,450	39,821
November	429	120	1,414,958	47,165
December	429	123	1,642,775	52,992
Total			16,506,564	
1922				
January	430	127	1,645,804	53,090
February	429	139	1,630,180	58,220
March	429	155	2,035,908	65,674
April	429	161	2,070,161	69,005
May	427	175	2,309,348	74,495
June	427	191	2,362,455	78,748
July	427	170	2,403,030	77,517
August	427	143	1,810,665	58,408
September	427	189	2,024,008	67,466
October	428	218	2,629,655	84,827
November	428	241	2,846,110	94,870
December	428	253	3,083,520	99,468
Total			26,850,844	
1923				
January	428	261	3,228,226	104,136
February	424	278	2,993,918	106,925
March	424	295	3,523,595	113,664
April	423	311	3,547,012	118,233
May	423	322	3,868,486	124,790
June	424	322	3,667,868	122,262
July	418	299	3,684,677	118,860
August	418	270	3,448,886	111,254
September	418	254	3,117,526	103,917
October	418	245	3,142,642	101,375
November	418	229	2,891,191	96,373
December	418	231	2,912,527	93,952
Total			40,025,850	
1924				
January	414	248	3,015,480	97,273
February	414	263	3,072,165	105,937
March	410	269	3,465,389	111,787
April	410	234	3,226,107	107,537
May	411	187	2,619,986	84,515
June	411	158	2,022,836	67,427
July	411	145	1,783,457	57,531
Aug.	411	150	1,882,986	60,741
Sept.	411	174	2,053,617	68,454
Oct.	411	182	2,461,444	79,401

Ingots and Castings

By American Iron and Steel Institute

	Ingots	Castings	Total
1918	43,051,022	1,411,410	44,462,432
1919	33,694,795	976,437	34,671,232
1920	40,881,392	1,251,542	42,132,934
1921	19,184,084	559,713	19,743,797
1922	34,568,418	1,034,508	35,602,926
1923	43,485,665	1,458,031	44,943,696

Monthly Ingot Output

1923	Gross Tons 94.84 per cent of capacity	Calculated total
January	3,644,629	3,841,095
February	3,294,264	3,471,843
March	3,858,675	4,066,680
April	3,760,997	3,963,736
May	4,000,695	4,216,355
June	3,574,567	3,767,256
July	3,350,829	3,531,458
August	3,506,755	3,695,788
September	3,185,082	3,356,776
October	3,394,128	3,577,091
November	2,974,005	3,134,321
December	2,716,814	2,863,266
Total	41,261,440	43,485,665
1924	94.84 per cent	
January	3,446,143	3,633,639
February	3,612,631	3,809,185
March	3,971,844	4,187,942
April	3,161,525	3,333,535
May	2,492,643	2,628,261
June	1,950,352	2,056,466
July	1,772,954	1,869,416
August	2,410,360	2,541,501
September	2,669,742	2,814,996
October	2,950,901	3,111,452